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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 34 **January, 1951** **No. 1**

NEW SOLUTIONS

JOHN S. LUNDY, M.D.
Rochester, Minnesota

THE MATERIALS which I wish to discuss comprise a category for which I do not know the name. They might be called "oncotic fluids" or "replacement fluids," but they should not be called "plasma or blood substitutes," and they never should be allowed to fall into the me category as solutions of crystalloid material such as salt and dextrose. These new materials are in sharp contrast to blood and plasma and to solutions of dextrose and salt. Crystalloid solutions, as well as blood and plasma, circulate not only lengthwise in the vessels but also laterally through the walls of the capillaries into and out of the tissues. In contrast these new solutions tend to remain in the circulation and to travel the length of the vessels with probably little lateral motion or passage through the walls. I have found them to be particularly valuable in treatment of shock, especially surgical shock.

The new solutions are dextran, gelatin, periston, acacia, pectin and isinglass, of which I will discuss only the first three.[2]

Dextran was first reported in 1944 by Grönwall and Ingelman[1] of Sweden. I have used the Swedish brand of dextran (macrodex) clinically for more than 1,500 patients since April, 1946. Dextran has been marketed in England under the name of "intradex."[3]

The molecular weight of dextran is rather large, varying from 5,000 to 350,000. Under the electron microscope the molecules appear as branched chains or even resemble the twig of a tree without leaves. The small molecules pass readily through the kidneys and the large molecules are retained in the circulation for many hours—as long as one or two days. An untoward deposit effect such as has been noted with acacia does not occur with dextran and it does not seem to have an untoward effect upon the diabetic patient. At the moment dextran is prepared as a 6 per cent solution in normal saline. A tiny amount of mercurial antiseptic is present in the solution which seems to prevent it from becoming contaminated easily. A 10 per cent solution, salt-free, has been used for the relief of nephrotic edema.[6] I have not had any experience with this preparation.

The technical use of dextran, gelatin and periston is similar and the effect is comparable; I will speak about their intravenous administration, the quantities and rate of flow later.

The gelatin that I have used has been furnished largely by one company. The products of some companies are said to have a molecular weight of between 20,000 and 500,000. I have objected to the name "plasmoid" for gelatin used by one company, because of the possible inference that it was a substitute for plasma. I wish it to be thoroughly understood that if a patient needs blood he should have blood if it is available. Plasma can be used, but it is inferior in results to any one of the three special materials: dextran, gelatin or periston. The gelatin preparation which I have used is packaged in liter bottles. In a series of urologic operations done by the transurethral approach it was found that under certain conditions equally good results could be obtained from one bottle of blood rather than two, or from two bottles rather

Read at the meeting of the Minnesota State Medical Association, Duluth, Minnesota, June 13, 1950.
From the section on Anesthesiology, Mayo Clinic, Rochester, Minnesota.

than three if a liter of gelatin were administered.[5] This was found to be true in cases in which a record was kept of the loss of blood accurate to within a few cubic centimeters, and in which it was realized that two or even three bottles of blood should be administered to make up for lost blood or anemia or both.

When dextran was first produced the supply was small. It was not as good as it is now and occasionally it produced an anaphylactoid type of reaction among unanesthetized patients. When my supply was exhausted I used gelatin; I found it necessary to add a vasopressor substance oftener with gelatin than with dextran to get the same blood-pressure-raising effect. On the basis of my experience in 1949, I am confident that five lives were saved with dextran; the patients were in extreme shock and many liters of blood had been administered without result. I did not use more than three 380 c.c. bottles of dextran for any one patient. The improvement in blood pressure and in the general condition of each patient was decided and all recovered. I have had numerous patients in a state of slight shock whose condition improved considerably on administration of one bottle (380 c.c.) of dextran. I would be definitely handicapped in combating surgical shock without dextran, gelatin, or periston.

In Sweden dextran has been used in treatment of patients suffering from burns with excellent results. I cannot speak from personal experience since I have had the opportunity to try it only twice on burned patients. More than 75 per cent of the skin of each patient was burned and neither of them survived more than a day or two after hospitalization. As mentioned previously, however, my remarks are concerned particularly with treatment of surgical and anesthetic shock. I am of the opinion that gelatin plus a vasopressor will give practically the same results as dextran but for a shorter time.

Periston is a solution of polyvinyl pyrrolidone dissolved in Ringer's solution. It was introduced by Weese, a German, in World War II. It is a synthetic substance in the nature of a resin or it might be considered as a soluble plastic substance. The molecules are not large but they are inert except in dogs. Dogs have a special sensitivity to the substance and a shocklike condition develops from it. The German Wehrmacht used a 2.5 per cent solution of periston more than 100,000 times but it did not make too favorable an impression. A 3 per cent solution has about the same colloidal osmotic pressure as plasma and about the same as 6 per cent dextran in normal saline. Weese has written to me to say that the material should be used in a 3.5 per cent solution. I have tried various strengths and I agree that the 3.5 per cent solution is by far the best concentration.[7] With it I have been able to raise blood pressure, with doses as small as 285 c.c., to about the same level as with 380 c.c. of dextran or a liter of gelatin preparation. I have not seen untoward results from the use of the dextran, gelatin or periston. If storage phenomena occur I am not aware of them.

Morrison,[4] who bled guinea pigs to the extent of 3.5 c.c. per 100 gm. of body weight, reported that all animals died which were not treated. In other instances various solutions were infused at the rate of 1 c.c. per 100 gm. of body weight, and the results are as follows: all guinea pigs to which saline was administered died; nine of the ten which were given 2.5 per cent periston died but only four of the ten which received 3.5 per cent periston died; of those to which serum albumin or whole blood was administered none died; five of ten died when dextran was used, and two of ten died when plasmoid was used. Morrison's experiments on rats, with the use of the same procedure as that for guinea pigs, revealed that all died when replacement was not employed; nine of ten died when saline was used; three of ten died when 2.5 per cent periston was used; two of ten died when 3.5 per cent periston was used; one died when serum albumin was administered; none died when whole blood was administered; three of ten died when dextran was used, and two died when plasmoid was used Morrison's work does not bear upon surgical shock; the figures are interesting, however, in connection with an attempt to bleed animals only and to treat them for hemorrhage with several different materials.

Price of these materials is important to the patient when results are equally good with any of them. At the moment, gelatin is cheaper than dextran. Periston is not yet commercially available. When however, results are as gratifying as I obtained for the small series of patients treated with dextran in 1949, patients who otherwise

probably would have died, price is not of prime importance.

In my experience as well as that of others expressed in the literature, no one has ever received an overdose of dextran regardless of how much has been given, provided the elevation of blood pressure did not become too great. By this I refer to dextran itself rather than to an overdose of fluids from the standpoint of volume as in a case of cardiac decompensation. Laboratory animals have been given tremendous doses every day for many days and have tolerated it well. My use of dextran has been conservative; I have never given more than three bottles (380 c.c. each) to any one patient during a continuous infusion.

Aside from treatment for surgical shock these materials might be useful in case of a disaster from the explosion of an atom bomb. It is to be hoped that dextran will be manufactured eventually in our own country and that, if investigators can find nothing seriously wrong with the use of periston, it, too, may be made available. If I had a word to describe this category of materials the definition of the expression would be "a substance which maintains the circulating volume in the cardiovascular system." I am without the word, but I wish to use the definition and to say that, in my opinion, the use of such substances in the treatment of surgical shock may give results which are beneficial or even lifesaving.

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WHO REPORTS PROGRESS IN MALARIA CONTROL IN ASIA

A scientific investigation made by the Agricultural Officer attached to the WHO Malaria Control Demonstration Team which has been in operation in the East Bengal area of Pakistan for the last two years, has conclusively proved that malaria control results in a direct increase of the yield of crops and an appreciable decrease in the man hours of labor which have to be expended per acre.

In a report received at the Eastern Mediterranean Regional Office of the World Health Organization from Dr. G. Gramiccia, leader of the WHO Malaria Control Team in Pakistan, particulars of this investigation are given. Surveys were made of the acreage planted with rice, of the number of hours worked per acre, the number of laborers employed, the yield of rice and straw per acre and the number of working hours lost due to illness, in a number of holdings where DDT spraying had been carried out, and also in other holdings which were not sprayed, for control purposes. Since weather and other conditions affecting crop yields were the same for both types of holdings, the 15 per cent increase of yield in the DDT sprayed areas and the decrease of man hours of labor required per acre of over 10 per cent in the same areas, can be fairly attributed to the malaria control work carried out. A further proof is the fact that, in the DDT sprayed areas, no working hours were lost due to illness whereas in the unsprayed control areas, there was a loss of working hours of 2.2 per cent.

The report adds that similar investigations are being conducted in relation to the jute crop, rice and jute being the two principal agricultural products of East Bengal.

The spraying operations for the season in the WHO demonstration area of East Bengal have now been completed 193 square miles with a population of 24,000 souls having been sprayed. Direct investigation of the incidence of malaria has shown that excellent results have been obtained in the control of the disease. No malaria infection was encountered in infants up to one year of age during an investigation of the areas sprayed in 1949 and 1950, or in 1950 only, whereas in the unsprayed control areas, there was an infant parasite rate of 7.1 per cent. Spleen rates and parasite rates in adults showed a considerable decrease in the sprayed areas as compared to the unsprayed areas.

Apart from malaria control work, the WHO demonstration team in East Bengal has established a maternal and child health clinic from which skimmed milk is distributed among children and nursing mothers.

The Pakistan Government has established additional malaria control teams in order to extend the area of operations.

NEWER ASPECTS OF URINARY TRACT INFECTIONS

Diagnosis

BAXTER A. SMITH, JR., M.D.
Minneapolis, Minnesota

THE advances in the medical and surgical management of urinary tract infections have made the importance of accurate diagnosis more essential, rather than less important, as one at first might think. At the present time, one has a good chance to conserve renal function which would have been considered beyond retrieve fifteen years ago. One may apply conservative therapy rather than excision and may be able to avoid multiple stage procedures, which would have been considered unwise a decade ago. In order to determine whether medical or surgical treatment is indicated and the proper type of therapy in both, diagnosis must be as precise as possible.

The general recognition of several new entities of diagnosis and types of infection has appeared. The flora of urinary tract infection has changed somewhat since the advent of the present antibacterial agents.

In diagnosis, the standard methods still apply and no short cuts have been recognized. The history and physical examination remain the same and still have their same importance. Palpation of the prostate and examination of the wet prostatic smear are imperative in all urinary tract infections in the adult male. The presence of cervicitis may prevent permanent clearing of infection of the urinary tract.

Some new advances in examination of the urine have been made. Gross inspection, the two glass test, and microscopic examination of the centrifuged sediment in the wet spread are essential. Very often bacilli are seen in abundance with the high dry lens in the unstained preparation. The absence of pyuria or organisms in the second glass, with pyuria in the first glass, excludes the upper urinary tract as the source of pyuria for practical purposes. The sediment of a voided urine from the female is of value only if negative.

Stain of the urine with methylene blue or Gram's stain will usually denote the type of organism present. Culture is necessary to determine the exact infecting organism and in all serious or resistant infections, should be undertaken. In the presence of stone with infection, culture is essential.

If culture shows no growth and antiseptics and antibiotics have not been given recently enough to inhibit growth, tuberculosis must be excluded. Anaerobic infections, such as urinary tract brucellosis or micro-aerophilic streptococcic infection may be present.

Reiter's disease and amicrobic cystitis or "sterile pyuria" have been considered as virus diseases, but proof has been lacking. The status of pleuropneumonia organisms in the genito-urinary tract is not settled.

Bacteriological flora of urinary tract infections has changed somewhat since the advent of the antibiotics. Aerobacter aerogenes is a much more frequent offender, and I believe pseudomonas aeruginosa is also, at least where multiple granulating wounds are present as in the service hospitals.

Stain of the urine for tumor cells may be indicated in determining the cause of resistance of infection to treatment and in differential diagnosis.

The presence of stasis, calculus, necrosis, or foreign body in the urinary tract makes treatment of infection difficult or impossible. Stasis in the bladder may be determined by checking the residual urine by catheter, or by a film after voiding during excretory urography. It should be emphasized that females may carry residual.

Excretory urography is indicated in all cases of serious infection, recurrent infection, or of resistant infection in the urinary tract, if total renal function is satisfactory, to exclude stasis, calculus, necrosis, and foreign body. The importance of the plain film preliminary to the injection of dye is emphasized lest stone or foreign body be obscured by the dye. Compression over the region of the iliac crossing of the ureters will usually effect satisfactory filling of the collecting system.

An excretory urogram will not exclude lesions of the bladder. It usually will give sufficient information to determine whether retrograde

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pyelography is indicated, but may not exclude lesions minor as to size, such as tuberculosis, epithelioma, or cicatricial pyelonephritis. It frequently will not determine the extent or type of gross disease. Small cortical abscesses and perinephric infection may not give definite pyelographic findings.

The excretory urogram is a good general test of renal function and is of great value relative to determination of the status of the uninvolved kidney in unilateral disease warranting surgery, conservative or radical.

A voiding cystogram, with a film taken just at the conclusion of voiding, will indicate the significance of vesical diverticula in diverticula of questionable importance.

Cystoscopy is necessary to rule out vesical lesions contributing to infection, and operative cystoscopy may cure the lesion, such as ureterocele or vesical papilloma. By indigo carmine excretion, the relative function of the two kidneys may be estimated, but a hypoplastic kidney incapable of supporting life may show a good excretion of indigo carmine.

Retrograde pyelography will give necessary information where excretory urograms may fail and is always indicated when one is in doubt. In the determination of borderline renal function of a kidney, the excretion of phenolsulfonphthalein or the clearance of urea may be determined quantitatively, but it is essential that catheter drainage be good and that all the renal urine be collected. This may be accomplished by using a good-sized bulb catheter or a Garceau catheter. The use of an acorn or bulb catheter gives the best pyeloureterogram. Lateral or stereo films may be very informative. Distention of the renal pelvis, and the making of an upright "emptying film," taken ten minutes after filling the pelvis with dye, may be necessary to determine the significance of otherwise questionable stasis or pain.

With obstruction to the upper urinary tract, estimation of potential function may be possible only after several days of drainage by inlying ureteral catheter and/or the remission of acute infection.

At the present time, mannitol or inulin clearance for glomerular filtration and the diodrast or para-aminohippuric acid clearance for tubular mass determinations do not seem practical except under the supervision of an excellent physiological chemist. The tubular mass and blood flow can be determined accurately by catheterization of the renal vein.

Conclusions

Whereas the antibiotics and chemotherapeutic agents have eased the problem of urinary tract infection no end, diagnosis frequently must be more accurate than before, relative to type and degree of infection and impairment of renal function. Only then can full advantage be taken of the possibilities offered by these medications and improved surgery in the preservation of renal function, our main concern.

A REPORT ON PROPAGANDA BECOMES PROPAGANDA

By slur and smear, the report of the house select committee to investigate lobbying, under the chairmanship of Rep. Frank Buchanan of Pennsylvania, *holds up to public contempt books, articles, and public discussion which find fault with the Truman administration.* The critics are represented as a "billion dollar industry" in lobbying.

On the contrary, the activities of administration spokesmen to influence public opinion and voting on legislation are described as "duties of leadership in matters of public policy" inherent in their "relation to the chief executive." In other words, any bureaucrat who speaks for Mr. Truman and the bureaucracy is discharging a duty; any private citizen or group of individuals opposing the administration is an enemy of the people.

It does not require any very searching examination of these theses to determine that Mr. Buchanan and his "Fair Deal" associates have themselves *unloaded a piece of cunning propaganda under the guise of a report on propaganda. They have used the pretext of investigating lobbying to engage in lobbying.* They are lobbying for big government—specifically, Mr. Truman's big government, and for the liquidation of dissent.

Sen. Taft, opportunely speaking on this subject the same day that Mr. Buchanan's majority burst into print, said that the Truman investigating committees are covering up corruption with whitewash.

The object of the corrupt Truman administration is to corrupt the judgment of the public, so that when everybody has sunk to a similar degradation, the political burglars can steal without even attracting notice. To this cause Mr. Buchanan and his associates have contributed what they could. To say that a few millions spent by people devoted to the Republic and to honesty in public affairs is wrong, while at the same time the Truman administration walks off with 60 or 65 billions of the people's money, is simply a diversionary clamor to cover the flight of the bureaucratic John Dillinger.—*Chicago Tribune*, October 7, 1950.

OFFICE TREATMENT OF URINARY TRACT INFECTIONS

HAROLD J. WALDER, M.D.
Duluth, Minnesota

WITH the addition of numerous drugs to the armamentarium available for therapy in urinary tract infections, the physician occasionally finds it difficult to decide which agent to employ in an individual instance. A brief discussion of the most important urinary antiseptics and the situations in which they may be utilized to best advantage would appear to be in order.

In an effort to see which organisms we most frequently encountered in the practice of urology, we reviewed the results of 220 consecutive urine cultures, which were reported in our office practice and in two Duluth hospitals (Table I). In column 1 is shown the number of times the various organisms were encountered in this series. Column 2 designates those organisms which split urea. Column 3 indicates their reaction to the Gram stain. Note that the Gram-negative organisms occurred approximately two and one-half times as frequently as the Gram-positive organisms.

TABLE I.

ORGANISM	220 CASES	SPLIT UREA	GRAM STAIN	MENDELAMINE	SULFA	SULAMYD	GANTRISIN	PENICILLIN	STREPTOMYCIN	AUREOMYCIN-LEDERLE / DUOMYCIN / CHLOROMYCETIN-PARK DAVIS / TERRAMYCIN-PFIZER & CO.
ESCHERICHIA COLI	106		-	++++	++	++	++		++++	++++
MIXED STAPH. & E. COLI	23		+& -	++	++	+& -				+++
PROTEUS VULGARIS	12	X	-	+	+		++		++++	++
AEROBACTER AEROGENES	15		-	+	+	++	+++		++++	++
PSEUDOMONAS AERUGINOSA (B. PYOCYANEUS)	11		-		+	+	+++		++	
PROTEUS AMMONIAE	5	X	-		+	+			+++	++
STAPH. ALBUS	9	X	+	++	+++	+++	++	+++		+++ RST. TO PENICILLIN
STAPH. AUREUS	20	X SOME STRAINS	+	+++	+++	+++	++	+++		+++ RST. TO PENICILLIN
STREP. FECALIS	9		+	++	+++	+++	++	+	++	+++ RST. TO PENICILLIN
STREP. HEMOLYTICUS	7		+	++	+++	+++	++	+++		+++ RST. TO PENICILLIN
STREP. VIRIDANS	3		+		+++	+++		+++		

TOTAL GRAM-NEGATIVE ORGANISMS 172
TOTAL GRAM-POSITIVE ORGANISMS 71

I have reviewed the work of several authors, and on this chart have endeavored to evaluate the effectiveness of the various drugs against organisms usually found in the urinary tract. Their effectiveness against these organisms is graded as 1-plus to 4-plus, the drug being most effective against those organisms where the 4-plus occurs. The vacant squares in the chart indicate that the drug or antibiotic has little or no known value in inhibiting or destroying that organism in the genito-urinary tract.

Perhaps the most venerable urinary tract antiseptic is hexamethylenamine, otherwise known as methenamine or "Urotropin." Its effectiveness depends upon the splitting off of formaldehyde in the presence of an acid medium. It is not an antiseptic in its own right, and has been shown by Helmholz to be efficient only when the urine is maintained at a pH close to 5. Time has proven the ineffectiveness of this urinary antiseptic in the majority of infections, but this should not blind one to the fact that methenamine has always been curative in some cases, and that it may be found the only agent, when all others have failed, that will bring about sterilization of the urine.

Following the discovery that ketogenic diets with the accompanying acidosis were effective in the treatment of chronic bacillary urinary infections, the use of mandelic acid was proposed by Rosenheim. It often induces nausea and vomiting, and after prolonged administration may produce hematuria with casts in the urine.

Very little has been written about methenamine or mandelic acid, *per se*, since 1939. Many physicians now use mandelamine, which is a combination of the two, and it is believed to be more effective than either alone. In 1946, Carroll and Allen reported on the treatment of 200 cases with mandelamine. They pointed out that Escherichia coli is susceptible to the antibacterial action of mandelamine. Eighty-five per cent of their cases responded to treatment. This organism was the most frequently encountered and was responsible for approximately 50 per cent of the urinary tract infections in their series and in ours.

Read at the annual meeting of the Minnesota State Medical Association, Duluth, Minnesota, June 13, 1950.
From the Department of Urology, Duluth Clinic, Duluth, Minnesota.

Proteus vulgaris and Aerobacter aerogenes are highly resistant to this drug. These organisms resemble Escherichia coli in staining and cultural characteristics to such an extent that they are often reported as such. It therefore seems advisable that any Gram-negative rod which resists mandelamine therapy should be investigated further for identification, since the organism may be found to be either a Proteus or an Aerobacter aerogenes. Unfortunately, these organisms are also highly resistant to sulfonamides and penicillin.

Mixed infections due to Escherichia coli and Staphylococci comprised 23 per cent of the cases in this series. Based on the work of Carroll and Allen, only about half of these cases respond to mandelamine alone. However, they showed that if these cases are given mandelamine plus penicillin, results are gratifying—the penicillin being effective against Staphylococci, mandelamine against Escherichia coli.

In all except eight cases treated by Carroll and Allen, the urine remained or became acid while receiving a total of three mandelamine tablets four times a day, without other medication or restriction of diet or fluid intake. The eight patients whose urine remained alkaline were resistant to therapy. Of these, three showed Proteus vulgaris which should respond to streptomycin therapy, and five showed Staphylococci which should respond well to sulfa or penicillin therapy.

The sulfa drugs vary in their effectiveness against various organisms. The factors of solubility in the urine, toxicity, and variations in antibacterial activity must be considered. Trisulfa combinations have been recommended because of their individual solubilities, and they are said to be less toxic than any one sulfa alone. However, Dr. Spink, of the University of Minnesota, objects to sulfathiazole because it produces vacuolization of the renal tubules and other toxic effects. He prefers sulfamerazine and sulfadiazine. Some of the newer trisulfa compounds have sulfamethazine in combination with sulfamerazine and sulfadiazine.

Sulfacetamide (commercially sold as "Sulamyd") has the advantage of high solubility, even in the physiological acid range of the urine, thereby minimizing almost to a negligible point the danger of crystal formation. In addition, it combines the features of good antibacterial activity, low toxicity, and rapid renal elimination, resulting in high urinary level. *In vitro* experiments with bacteria isolated from infections of the urinary tract, performed by Lehr, indicate its effectiveness in the concentrations usually maintained in the urine of a patient under treatment with standard dosages. It is recommended that 3 to 4 gm. be given daily for the first two or three days of the acute urinary infection, followed by 2 gm. (0.5 gm. four times daily) for an additional five or six days. Alkalinization of the urine does not appear to be necessary. However, the incidence of loss of appetite, nausea and vomiting is high, and when it is used in office treatment, the patient should be warned of these possibilities.

Gantrisin is an effective chemotherapeutic agent in some infections caused by Escherichia coli, Pseudomonas aeruginosa (B. pyocyaneus) and Proteus bacilli. Reports of its value in treating infections due to the latter two organisms become more questionable as the drug is more extensively used. Also, there appears to be no relation between the blood or urine sulfonamide levels and its bacteriostatic properties. Reactions similar to those occurring with other sulfonamides occur during the administration of gantrisin. Crystalluria, however, is not observed either in an acid or an alkaline urine.

The introduction of penicillin with its potency in combating coccal infections immediately led to its use in this group of infections, and it has found its chief usefulness in the treatment of Staphylococcus aureus and albus and beta hemolytic streptococcus. Recently, it has been noted that although no resistant strains of gonococci are reported, there are strains of Staphylococci which are developing resistance to this antibiotic. It has almost no place in the treatment of infections caused by Streptococcus faecalis and fails utterly in those produced by Escherichia coli and Pseudomonas aeruginosa (B. pyocyaneus). Initial high dosage is important. However, the necessity for maintaining a consistently high blood level has been overemphasized in recent months. In urinary tract infections, 100,000 units of crystalline penicillin G in water every twelve hours in sufficient in practically all cases. For oral dosage, one should give five times as much as by intramuscular injection. It should be given on an empty stomach. In using penicillin, observe the patient for delayed penicillin reactions a week or

so later, such as urticaria or serum-sicknesslike disorders.

Streptomycin has been shown to be effective against various Gram-negative bacilli frequently responsible for urinary infections which are refractory to sulfonamides and penicillin. Most of the large medical centers have laboratory facilities for determining streptomycin sensitivity on urine cultures, but this service has not been available to many physicians.

The results of streptomycin therapy are most impressive in infections caused by Escherichia coli, Aerobacter aerogenes, Proteus ammoniae and vulgaris. Pseudomonas aeruginosa and certain strains of Streptococcus faecalis respond only moderately well (Adcock). Using 2 to 3 grams of streptomycin daily, a blood level of 20 units per c.c. of serum can be attained, and those organisms falling within this range of sensitivity, as determined by *in vitro* studies, may be considered susceptible to therapy. In urinary infections it has been determined that 1 gram per day is sufficient.

The effectiveness of streptomycin is enhanced when the urine is alkaline; around a pH of 7.2 to 7.4. This generally can be attained by the oral administration of sodium bicarbonate or sodium citrate. Potassium citrate may be substituted for the sodium citrate when the cardiac status of the patient poses a problem. When streptomycin is effective, the bacteria generally disappear from the urine in three to seven days.

The neurotoxic effect of the drug on the vestibular apparatus rarely occurs during the usual ten-day course of therapy. It has recently been pointed out that delayed loss of hearing is much more frequent with dihydro-streptomycin than with streptomycin; therefore, Spink and others are avoiding the prolonged use of dihydro-streptomycin.

Aureomycin, chloromycetin and terramycin are all of advantage against essentially the same Gram-negative bacillary infections and Gram-positive cocci, especially those that are resistant to penicillin. They are primarily bacteriostatic and not bacteriocidal. While I have listed these antibiotics together, it is well not to think of chloromycetin as interchangeable with aureomycin. Chloromycetin is not as effective as aureomycin in Staphylococci infections, but it is more effective in Proteus infections. Generally speaking, the dosage of chloromycetin should be approximately two times that of aureomycin or terramycin. Three gm. are recommended the first day, 2.0 gm. for five successive days, then 1.0 gm. daily for an additional four days, all doses being appropriately divided. Results are favorable with this regimen. The drug is well tolerated and devoid of gastrointestinal, neurotoxic, cutaneous or allergic reactions.

If aureomycin is given with milk on an empty stomach, there is less intestinal upset and no decrease in absorption.

Thus we see, when we glance at the chart, that no one drug is effective against all organisms. A Gram stain of the urinary sediment suggests which drug or antibiotic might be most effective, even though the organism has not been specifically identified.

Reports vary in the incidence of finding both bacillary and coccal infections from 21 per cent up to 65 per cent. If one finds both Gram-positive and Gram-negative organisms, there is more than a 50 per cent chance that the Gram-negative organism is Escherichia coli and, therefore, chemotherapy or some antibiotic should be used which is effective against this organism, plus selected therapy against the Gram-positive organisms. In the office treatment of urinary tract infections a combination, such as mandelamine plus penicillin, or sulamyd or gantrisin plus penicillin, may be desirable.

Prior to the advent of sulfonamides in the middle of the last decade, the chemotherapy of urinary infections was more or less on an empiric basis. Whatever benefits were derived from the therapeutic agents were probably the result of changes in the pH of the urine with varying bacteriostatic effect.

During the past ten years, several clinical reports have appeared in the literature on serenium and pyridium. Although one may accept the fact that they do not meet the modern criteria for a "urinary antiseptic," and apparently none of the urinary antiseptics do, they are bacteriostatic against some of the pyogenic organisms and are said to have analgesic effect upon an inflamed mucosa. They are contraindicated in chronic parenchymatous nephritis, especially in patients with a low phenolsulfonphthaline output. We have used these products frequently, but we are never sure in just which cases they will be most advantageous.

Regardless of the form of therapy used, a

follow-up of cases of urinary tract infections treated in the office is most important. We should endeavor to define our results as: (1) controlled —symptom free, urinary cultures sterile; (2) improved—symptom free or clinically better, but urinary smears or cultures positive; and (3) unimproved—symptoms and cultures unchanged. This also includes those cases which have relapses.

Of interest is the fact that a remarkable change has been observed in the bacterial flora of urinary tract infections. Especially striking is the decided increase in the frequency of isolating Aerobacter aerogenes and Pseudomonas aeruginosa (B. pyocyaneus). Several authors have noted this trend. Dr. Grayson Carroll believes it is due to the oragnisms' resistance to antibiotics and other drug inhibitors, and as time goes on, these surviving strains will, undoubtedly, constitute a higher percentage of urinary infections as the more susceptible strains are destroyed. It is evident that asepsis must be diligently practiced, when it is realized that such an infection carried to another patient is so pathogenic and so difficult to treat successfully. We are again in need of a new weapon to fight these surviving bacteria. On glancing at the chart, note that the new antibiotics are only moderately effective against Aerobacter aerogenes and of no value against Pseudomonas aeruginosa.

In discussing these two resistant organisms, two new antibiotics should be mentioned. Polymyxin has been shown to be fairly effective against Pseudomonas aeruginosa; and neomycin is effective against Pseudomonas and Proteus infections. However, they have both been found to be nephrotoxic and will probably not appear on the market for general use.

In summary then, urinary tract infections should first be investigated—at least by a Gram stain; then the mode of therapy most effective against the etiologic agent should be used.

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ARMY DECENTRALIZES APPOINTMENTS FOR MEDICAL DRAFT REGISTRANTS

The inauguration of a decentralized system of Reserve officer appointments, which will expedite action on applications made by draft-eligible physicians, dentists, and veterinarians, has been announced by Major General Raymond W. Bliss, Army Surgeon General.

Under the new system, the entire processing of Reserve commissions will be accomplished in the six continental army areas and overseas commands for applicants now enrolled under the current draft call. Commissions will be issued by army commanders and overseas commanders to applicants who qualify without referral to the Department of the Army.

For those subject to induction by Selective Service, the following procedure will be followed:

Initially, the registrant will fill out a questionnaire that will include a statement as to whether he desires to accept a commission. This questionnaire will accompany him to his local induction station when he reports for his physical examination. At that time he will be given another opportunity to indicate his willingness to accept a commission, if he has not previously so indicated.

Records will then be forwarded to the appropriate army headquarters where the qualifications of the registrant will be determined. If qualified, the army commander will send the registrant a letter of appointment in an appropriate grade in the Medical, Dental or Veterinary Corps Reserve, with instructions to complete an oath of office within seventy-two hours and notify his selective service board of his commissioned status.

Physicians and dentists accepting commissions under these circumstances will receive the special $100 authorized pay for volunteers.

SIGNIFICANCE AND MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX

W. R. SCHMIDT, M.D.
Minneapolis, Minnesota

SPONTANEOUS pneumothorax occurs more frequently than we realize. At an Army induction center one in 500 examined gave a history of having had a spontaneous pneumothorax.[3,7] It is likely that many of the minor episodes are never diagnosed and are treated as an attack of "pleurisy."

In the majority of our cases there has been no history of abnormal exertion; the symptoms most commonly noted are pain in the chest, usually severe, dyspnea, and frequently cough. The classical physical findings of pneumothorax are present when the lung is collapsed about 40 per cent of its normal volume. A good chest x-ray taken in the upright position will confirm the diagnosis.

There has been considerable confusion as to the significance of an attack of spontaneous pneumothorax. This is not surprising when one considers that in the 1930's it was common teaching in many medical schools to regard tuberculosis as the etiological agent in 95 per cent of all cases. Cecil's *Textbook of Medicine* in the 1940 edition[2] states that 80 per cent are of tuberculous origin. However, since 1933 a number of case reports have been published in which the authors[4] stress the frequency in which spontaneous pneumothorax has occurred in patients with no pulmonary disease, tuberculous or otherwise. A study of 100 Massachusetts General Hospital patients with spontaneous pneumothorax by Meyerson[5] revealed that thirty-six had no demonstrable pulmonary disease, while in sixty-four the pneumothorax was secondary to some pre-existing pulmonary disease. About half of those with pulmonary disease had tuberculous infiltrations; however, the number with activity is not stated.

A study of twenty cases of spontaneous pneumothorax admitted to this hospital reveals the figures shown in the accompanying tabulation.

It is of interest to note that a history of exertion occurred in only three cases. Three patients first noted the onset of pain when awakening from sleep. Four patients were treated initially as having an attack of "pleurisy" with taping of the chest. One patient was thought to have a "coronary attack," and several electrocardiograms were made before a chest x-ray revealed the proper diagnosis.

FINDINGS IN TWENTY CASES OF SPONTANEOUS PNEUMOTHORAX

Age	15 to 30
Number of those with previous attacks	7
Bilateral attacks	1
No history of exertion	17
Pain	20
Severe pain	9
Cough	5
Dyspnea	13
Positive Mantoux	6
Fibrotic infiltration on chest x-ray	5
Emphysema with blebs	2
Negative chest x-rays	13
Total cases	20

Our attitude towards this problem may be summarized as follows: Spontaneous pneumothorax usually occurs because of a rupture of a bulla or bleb on the lung. In a majority of the cases the bleb represents a congenital or acquired weakness in an otherwise normal lung. In others the bleb is a natural sequence of some underlying pulmonary disease such as pulmonary tuberculosis or cystic disease. It is of great importance that we recognize this distinction in the pathogenesis of the pneumothorax as the after-care of the two groups differs.

With this in mind we can formulate a rational plan of management of the patient following recovery from the pneumothorax. In the group that has no demonstrable pulmonary disease we can be reasonably sure the patient will remain in good health; we need not restrict his physical activity beyond a very short recovery period. He must be warned that he has a 14 to 20 per cent chance of a recurrence of the pneumothorax either on the same side or, less likely, on the contralateral side. As a precautionary measure, follow-up chest x-rays can be obtained every six months for a period of two years. In the group in which the x-ray reveals or history strongly indicates underlying pulmonary disease, his follow-up care is dependent on the type of pulmonary disease present. If, for example, there is an area of infiltration suggestive of tuberculosis (and this may appear quite innocent), thorough investigation to rule out activity

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Fig. 1. Case 1. Admission film, February 28, 1950. Extensive pneumothorax, left.

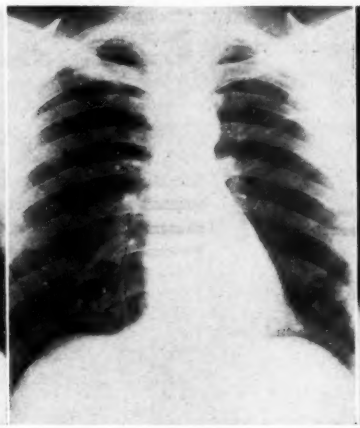

Fig. 2. Case 1. Film, March 4, 1950. Left lung expanded after aspiration of air.

Fig. 3. Case 1. Film, May, 1950. Left lung collapsed. Chronic pneumothorax.

of the lesion is in order, including several sputum and gastric washing cultures. Even when the lesion appears to be inactive, the patient must be followed more carefully than those in the first group. While the number of patients who develop a progression of their tuberculous lesion will be small, we have seen a fair number of patients admitted to the Veterans Administration Hospital with far advanced tuberculosis who gave a history of a spontaneous pneumothorax several years prior to admission. Review of the x-rays taken during the time of the pneumothorax will usually show a small area of infiltration suggestive of tuberculosis.

The management of the patient who develops a spontaneous pneumothorax will vary according to the severity of the attack. Minor degrees of pneumothorax, especially if seen several days after the onset, may require nothing more than symptomatic treatment with the patient remaining on an ambulatory basis. The more severe degrees of collapse require hospitalization. It is common practice in most institutions to allow the lung to remain collapsed on the theory that the fistula will heal more rapidly. The air will then absorb and the lung expand. Undoubtedly most cases will respond to this form of therapy, and when the lung expands quickly and steadily, it will be the treatment of choice.[1] However, when the lung fails to expand steadily and where relapses occur, this method becomes wasteful and should be abandoned for more active therapy. Prolonged hospitalization and loss of time from work is a considerable economic burden to most individuals. Since the pneumothorax in the majority of instances can be regarded as a mechanical accident to an otherwise perfectly healthy individual, it becomes the duty of his physician to restore him to a normal state in a reasonable period of time. The expectant treatment, when unduly prolonged, has an additional disadvantage in that in an occasional case the collapsed lung will become trapped in its abnormal position by a fibrin and later fibrous membrane forming over the visceral pleura. Expansion of the lung then becomes difficult or impossible without open thoracotomy and decortication of the fibrous "peel" from the lung.

The following case report is an example of this complication:

Case 1.—L. E., aged thirty-six, was admitted to the Minneapolis Veterans Hospital on February 28, 1950, because of an extensive spontaneous pneumothorax on the left (Fig. 1). He had had a similar episode in 1947 for which he was treated by three months' bed rest with recovery. Four days after this admission the chest was aspirated and 1000 c.c. of air removed. The subsequent roentgenogram showed almost complete re-expansion (Fig. 2). The collapse, however, returned. Unfortunately, the patient refused more active type of therapy and was continued on bed rest. Eight weeks after the admission reaspiration was done and the lung found to be trapped in the collapsed position by a thickened membrane over the visceral pleura. Decortication was suggested on April 26, 1950, but refused by the patient who left the hospital on May 29, 1950, with a chronic pneumothorax (Fig. 3). The patient has a 10 per cent chance of getting a pneumothorax on the contralateral side which could easily result in sudden death.

In this case, when collapse recurred, more active therapy, namely catheter suction of the pleural space, in all probability would have restored him to a normal status in a few days.

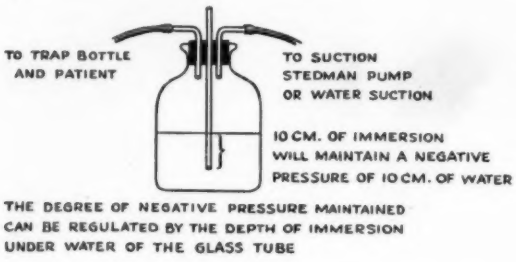
TO TRAP BOTTLE AND PATIENT
TO SUCTION STEDMAN PUMP OR WATER SUCTION
10 CM. OF IMMERSION WILL MAINTAIN A NEGATIVE PRESSURE OF 10 CM. OF WATER
THE DEGREE OF NEGATIVE PRESSURE MAINTAINED CAN BE REGULATED BY THE DEPTH OF IMMERSION UNDER WATER OF THE GLASS TUBE

Fig. 4.

In the event that expansion is not proceeding satisfactorily after several days of bed rest, it is suggested that the air be removed by needle aspiration. There is little danger of producing a high negative intrapleural pressure and thus reopening the fistula by this maneuver since the lung in this early stage will be readily expandible and will fill the pleural space as rapidly as the air is removed.[3]

Failure of the air leak to close promptly (and this is indicated when the lung fails to expand after needle aspiration or when the pneumothorax recurs after aspiration) is an indication for continuous aspiration. An additional indication for this type of therapy is the development of a tension pneumothorax which is a constant source of danger to the patient unless promptly and continuously relieved. Continuous aspiration of the air is easily accomplished by insertion of an intercostal catheter. This is a simple bedside procedure using local anesthesia and a trochar. The catheter is attached to a suction apparatus. We use a Stedman type of suprapubic pump. If no other pump is available, a water faucet suction attachment will be satisfactory. Some type of mercury or water breakover mechanism must be interposed in the suction line in order to avoid producing too high a negative pressure. A negative pressure of 10 cm. of water is ideal. A satisfactory type of regulator which can be made in a few minutes from material readily available in any small hospital is described by Overholt[6] and is shown in Figure 4.

The following case report demonstrates the indications for catheter suction:

Case 2.—Mr. G. B., aged twenty-nine, was admitted July 25, 1950, because of a right spontaneous pneumothorax occurring on July 11, 1950. He was treated for one week by bed rest at which time his dyspnea increased. Chest aspirations were then done with failure of the lung to expand. On admission to the Veterans Hospital the right lung was about 80 per cent collapsed; catheter suction was immediately instituted. Re-x-ray of the chest twelve hours later showed complete expansion. The tube was clamped and removed after a trial of ambulation failed to reopen the fistula. The patient was discharged completely recovered on July 31, 1950, with instruction to have follow-up x-rays at six-month intervals.

Almost invariably the lung expands promptly with this method and remains expanded. The majority of the air leaks will close with great rapidity when the visceral and parietal pleura are maintained in contact by continuous suction for a period of twenty-four to forty-eight hours. When the lung expands, the patient will experience considerable pain requiring opiates for relief. After the lung has been expanded for twenty-four to forty-eight hours, the tube may be clamped and suction discontinued. The tube is then removed as soon as it is evident that the pneumothorax is not recurring.

On removing the catheter, it is well to seal the opening in the chest with collodion and cotton for a few hours to prevent any sucking of air back into the pleural space.

The patient who is afflicted with several recurring attacks of pneumothorax, and particularly when there is a history of bilateral involvement, is best treated by obliteration of the pleural space. This has been accomplished by the induction of a chemical pleuritis with various irritants such as hypertonic glucose, silver nitrate (Brock[1]) and iodized talc (Bethune). We have abandoned other methods in favor of open thoracotomy with scarification by dry gauze of the visceral and parietal pleura along with clamp excision and suture of the bleb and fistula. Suction catheters are introduced into the chest to maintain full expansion in the immediate postoperative period. This procedure is safe, and since it can be done without waiting for the patient to recover from his current attack of pneumothorax, will not require more than a week of hospitalization. The resulting pleural symphysis will prevent recurrence of a pneumothorax that is frightening to the patient as well as disabling and at times dangerous. The following case history illustrates an example of this therapy:

Case 3.—Mr. K. L. L., aged twenty-six, was admitted to the Minneapolis Veterans Hospital on April 21, 1950,

because of a left spontaneous pneumothorax. There was a history of an initial attack in 1943 followed by recurrences in August, 1947, June, 1948, and June, 1949. All were on the left side. They were not associated with following other types of surgery. Every surgeon and anesthetist must be aware of the possibility of this complication in patients who develop respira-

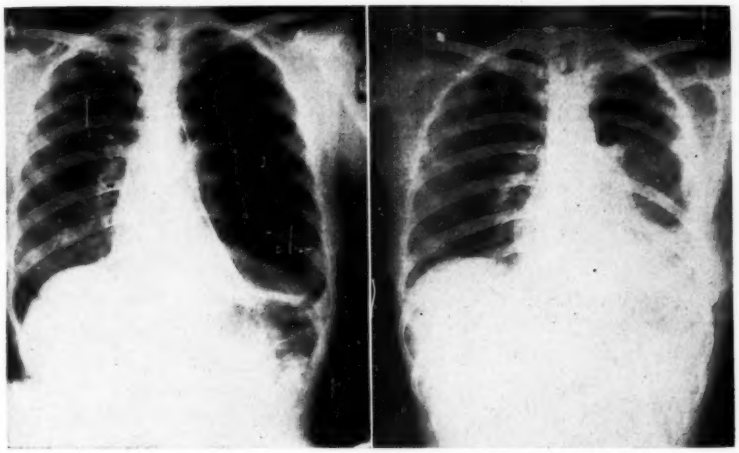

Fig. 5. (*left*) Case 4. X-ray, January 3, 1949. Chronic pneumothorax, left.
Fig. 6. (*right*) Case 4. X-ray, January 15, 1949. Postoperative re-expansion, left lung, after decortication, excision of blebs and fistula, and scarification of the pleura.

exertion. Mantoux tests were negative. Thoracotomy with scarification of the left visceral and parietal pleura was done on May 1, 1950, and the patient discharged on May 9, 1950.

The occasional case of chronic pneumothorax with a nonexpandible lung is treated in a similar manner as demonstrated by the case shown below:

Case 4.—Mrs. B. was admitted to St. Mary's Hospital on the service of Doctor T. J. Kinsella on January 2, 1949, because of a chronic pneumothorax of many months' duration (Fig. 5). She had had the various methods of conservative management including re-expansion of the lung with catheter suction on two occasions. The pneumothorax, however, promptly recurred. Finally a membrane formed over the visceral pleura trapping the lung in its collapsed position with the fistula remaining open. She was treated by open thoracotomy and decortication of the lung. The open fistula was easily seen in a nest of blebs on the lingula of the left upper lobe. The fistula and blebs were removed by clamp excision of a small peripheral portion of lung parenchyma with suture behind the clamps. The lung expanded readily. She has been well since (Fig. 6).

Spontaneous pneumothorax may occur as a complication of surgery. This is particularly hazardous in chest surgery when it occurs in the contralateral side. We have had two deaths in patients who had undergone pneumonectomy and developed a spontaneous pneumothorax on the opposite side postoperatively. It can and does occur tory difficulties during anesthesia without other adequate explanation. The anesthetist can readily feel for the trachea which may be shifted from its normal midline position to the side opposite the pneumothorax. The chest will be hyperresonant to percussion. Insertion of a needle into the pleural space which will allow release of the tension pneumothorax is a lifesaving procedure.

The diagnosis may be difficult when the pneumothorax occurs in the postoperative period. Good x-rays are difficult to obtain in a patient who is very dyspneic. Consequently the diagnosis here at times must be based on physical examination alone. The presence of amphoric breathing and hyperresonance to percussion may be the clues to the proper diagnosis. The following case affords a typical example of this problem.

Case 5.—A. S., a Veterans Hospital patient, aged thirty-eight, was admitted on March 3, 1949, because of tuberculosis involving the right upper lobe (Fig. 7). In June, 1946, he had had a right pleural effusion and in March, 1947, a right spontaneous pneumothorax. The lesion in the right apex was present at that time. He was admitted to this hospital in March, 1949, because of progression of the lesion with sputum positive for tubercle bacilli. A three-stage thoracoplasty was done in July, 1949, and a right upper lobe lobectomy on May 10, 1950, because of failure of the thoracoplasty to convert the sputum.

His postoperative course was uneventful except for

atelectasis of the right middle and lower lobes which necessitated bronchoscopic aspiration on the second postoperative day, May 12, 1950. A routine film of the chest was obtained immediately after this latter procedure to check on the progress of the atelectasis. Shortly after this procedure the patient became very dyspneic. The attending staff was not aware of the film showing the pneumothorax, and a portable bedside film obtained when the patient was very dyspneic was so blurred by motion that it did not contribute to the diagnosis. The physical findings were not thought to be suggestive of pneumothorax. The true situation was recognized the following day and the air removed from the left chest with prompt improvement in symptoms.

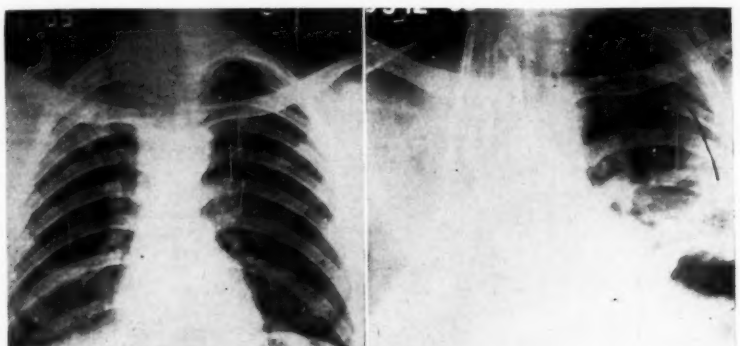

Fig. 7. (*left*) Case 5. Film, May, 1949. Tuberculosis, right upper lobe. History of spontaneous pneumothorax in 1947.

Fig. 8. (*right*) Case 5. Film, May 12, 1950. Patient developed left spontaneous pneumothorax four days postoperatively (right upper lobe lobectomy under thoracoplasty). This occurred two hours after bronchoscopy to relieve right lower lobe atelectasis (photograph retouched).

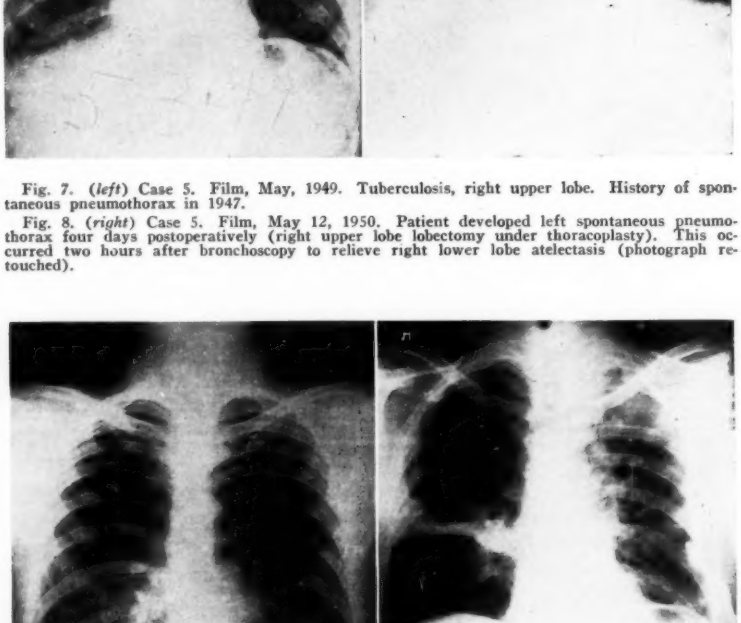

Fig. 9. (*left*) Case 6. Preoperative chest film in a case of giant bullous emphysema. Note the bilateral giant bullae occupying the upper lung fields with smaller bullae in the lower lobes. Note also the compressed pulmonary parenchyma below the large bullae on the left.

Fig. 10. (*right*) Case 6. Postoperative chest x-ray on December 1, 1949, showing left side well expanded after excision of several large bullae. The air-containing bullae on the right side have enlarged, probably due to coughing and straining postoperatively.

As air travel becomes more common we should be familiar with the effects of altitude on air in confined spaces, such as occurs in large pulmonary blebs or spontaneous pneumothorax. At 17,000

(Continued on Page 58)

URINARY ACETONE—ITS DETECTION AND VALUE IN TREATING AMBULATORY DIABETICS

BURTIS J. MEARS, M.D.
Saint Paul, Minnesota

IN diabetes mellitus the body cannot adequately use its carbohydrates and so turns to fat as a source of energy. Fats, *per se*, cannot be used by the body. They must first be broken down by the liver to the ketone bodies, namely, acetone, diacetic acid and betaoxybutyric acid. The muscles readily use these acids but their capacity to do so is limited. If the ketone bodies are formed faster than they can be utilized by the muscles, acidosis results and the ketone bodies are excreted in the urine, giving an objective sign of acidosis.[2,4]

This acidosis with ketonuria is found in various clinical states such as wasting diseases, strict reducing diets and starvation, diarrhea, et cetera. The acidosis in these conditions has the same etiology as in diabetic acidosis, namely, the formation of ketone bodies from fats faster than the muscles can use them.

With the finding of both sugar and ketone bodies in the urine, a diagnosis of diabetes can be made, because with the benign causes of glycosuria, such as lactosuria and renal glycosuria, acidosis does not occur. Of course, not all patients with diabetes are in acidosis. In a few exceptional circumstances ketonuria and glycosuria can occur without diabetes. For example, starvation, as seen in vomiting and diarrhea, will call for an excess breakdown of fats causing ketonuria, and then when the body is therapeutically flooded with intravenous glucose, glycosuria will also be present. Severe liver disease with malnutrition, faulty glycogen storage, and decreased carbohydrates tolerance, could show ketonuria and the oral intake of carbohydrates could cause a temporary hyperglycemia and glycosuria. Patients on self-imposed, strict reducing diets may develop a temporary diminished carbohydrate tolerance along with increased fat catabolism. Ketonuria will be present, and here again, glycosuria may become apparent after carbohydrate ingestion.

Testing for acetone in the urine by the Rothera method rather than looking for diacetic acid is done by this author because acetone appears first in acidosis and disappears last as the condition is corrected, and is technically easier to detect. A possible criticism of the Rothera test is that it is so delicate that it will show faint traces of acetone before true acidosis occurs, but in this state of affairs, the trace of acetone is a warning against imminent acidosis. It must be remembered that in renal insufficiency, so often seen in the older diabetic, the excretion of the ketone bodies is impaired, and acidosis may exist with a negative or weakly positive test.

The Rothera Test.—To approximately 5 c.c. of urine in a test tube is added about 1 gm. of Reagent I (5 gm. sodium nitroprusside and 200 gm. dry ammonium sulfate, pulverized and mixed).

Reagent II (concentrated ammonia) is carefully layered on top of the urine. A purple ring developing in a few seconds at the junction of the two layers indicates the presence of acetone.[6]

A test so simple and valuable as this should be routine whenever sugar is found in the urine.

Although the present accepted definition of diabetic coma usually depends upon the ascertaining of the level of the carbon dioxide-combining power of the blood, diabetic acidosis can easily be defined as being present whenever acetone in any amount above a trace is found in the urine of a diabetic. Diabetic acidosis is no longer thought to be due to dietary indiscretions but rather due to one of the following conditions: (1) insufficient insulin, (2) infection, (3) trauma either accidental or surgical, (4) hyperthyroidism, or (5) pregnancy.

Whenever the ambulatory diabetic showing a strongly positive Rothera test presents himself for treatment, the decision of hospitalization must first be made. Flushing of the face, dyspnea, hyperventilation, dulling of the sensorium, anorexia and vomiting are all ominous signs and should suggest the necessity of immediate hospitalization.

If ambulatory treatment is undertaken, the following procedures and instructions are suggested:

1. Treat the cause of acidosis, keeping in mind the etiological factors: insufficient insulin, infec-

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tion, trauma, and the decreased sugar tolerance of pregnancy and hyperthyroidism.

2. Force fluids. There is nearly always some degree of dehydration in acidosis.

3. Adequate carbohydrate intake. In severe diabetic acidosis treated in the hospital where repeated blood sugars are available, much evidence is in favor of withholding sugar for at least twelve hours or until a blood sugar level has started to drop.[1,5] In the acidotic patient treated at home, adequate insulin always carries the danger of a sudden hypoglycemia. A large glucose intake, although perhaps prolonging the hyperglycemia and glycosuria, does not materially prolong the acidosis[3] and is good insurance against hypoglycemia. If there is anorexia or fever, a simple but effective means to insure proper carbohydrates intake is to instruct the patient to drink at least two quarts of fruit juice every twenty-four hours. This amount of juice will give approximately 200 gm. of carbohydrates.

4. Qualitative Benedict's test four times a day.

5. Insulin dosage is adjusted to the amount of sugar found in the urine. All long-acting insulins are stopped until the patient is brought under control. The urine is tested before meals and at bedtime. A dosage of regular insulin is established, depending on the degree of glycosuria and the previous demands of the diabetic. A fairly safe rule is to give the previous dose of insulin four times a day if the Benedict test is 4 plus. Thus a diabetic, who has been fairly well controlled on 25 units of slow acting insulin per day, presenting himself with fever and signs of acidosis, can usually tolerate at least 25 units of insulin four times a day if the glycosuria is 4 plus. As the acidosis is brought under control, the glycosuria will diminish before the acetonuria.

Conclusions

The Rothera test is a simple and delicate test for acetone in the urine. The presence of acetonuria in any great amount signifies an increase in fat catabolism and/or metabolism. In the diabetic, this is the initial step in the production of acidosis.

The rules as to the urine testing four times daily and the adjustment of the insulin dosage to each urine test is not only applicable to the acidosis patient but sometimes is the only method whereby the fragile diabetes of the young, the pregnant and the hyperthyroid can be properly controlled.

A simplified explanation of the etiology of acidosis has been presented.

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MODERN TREATMENT FOR PARKINSON'S DISEASE

Modern treatment for the one million victims of Parkinson's Disease in the United States can result in this distressing malady's being well controlled, and often alleviated almost completely, Dr. John C. Button, Jr., chairman of the Medical Advisory Council of the Parkinson's Disease Foundation recently reported.

The disease, which is also known as "shaking palsy," causes progressive paralysis accompanied by uncontrollable trembling. It may be caused by sleeping sickness, influenza, grippe, and in older individuals, hardening of the arteries of the brain.

Dr. Button, who is medical director of the Button Neurological Institute, Orange, N. J., stated that "a large proportion of the public long has been under the mistaken impression that little or nothing can be done for the estimated one million sufferers of Parkinson's Disease in this country. That such a belief is far from the truth is being demonstrated every day in the few institutions where the modern treatment of this condition is properly and adequately given."

The purpose of the Parkinson's Disease Foundation, which is planning to set up units of its national organization in the major cities of the United States, is to provide funds for the treatment of victims of Parkinson's Disease, most of whom have lost their means of livelihood as a result of long continued disability.

The Parkinson's Disease Foundation, which has national headquarters at 744 Broad Street, Newark, N. J., is interested in hearing from individuals and organizations interested in treatment of this disease.

SKIN ALLERGY

Newer Trends in Diagnosis and Therapy

STEPHAN EPSTEIN, M.D.
Marshfield, Wisconsin

SKIN allergy embraces a very wide field. One cannot hope to cover much ground in a brief discussion; therefore, I shall just describe some newer trends in diagnosis and treatment of allergic skin diseases. There are many points which I have to omit, but I have prepared mimeographed lectures on allergic skin diseases which will cover both the points I am discussing here and those we have to miss.*

Like many others, we shall use the terms "dermatitis" or "eczema" only as an over-all classification to denote certain common acute and chronic superficial inflammations of the skin. The terms "eczema" and "dermatitis" are used here interchangeably, although we often reserve the designation of dermatitis for the more acute cases and eczema for the more chronic ones.

Classification

For practical purposes, allergic dermatitis or eczema may be divided on a somewhat pathogenic basis as follows:

1. Atopic dermatitis (neurodermatitis).
2. Contact dermatitis.
3. Infectious eczemas (bacterial, mycotic and other parasitic eczemas), including seborrheic dermatitis.
4. Miscellaneous forms of eczema.

All classifications are arbitrary. Furthermore, very often we encounter a combination of different forms of eczema or one form of eczema may gradually change over into another one. In spite of this, it is important for proper management and evaluation to grasp the principal distinctions between the different forms of eczema and to recognize to which category a case of eczema belongs.

Atopic Dermatitis (Neurodermatitis)

Atopic dermatitis is not just "an allergy." Table I will present the most important contributing pathogenic factors.

TABLE I. CONTRIBUTING PATHOGENIC FACTORS IN ATOPIC DERMATITIS

1. Atopic sensitivity
2. Other skin sensitivity
   a. Epidermal sensitivity
   b. Infectious sensitization
3. Constitution
   a. Heredity
   b. Neurovascular instability
   c. Personality traits
4. Hormonal factors
   a. Hypothyroidism
   b. Estrogen imbalance
   c. Hormonal deficiency in the male
5. Environmental factors
   a. Psychologic conflicts and emotional upsets
   b. Situations of stress and strain
6. Complications and aggravating factors
   a. Secondary infection
   b. Contact dermatitis
   c. External irritation: mechanical, chemical, actinic, heat, humidity

This is quite a list. No wonder this form of eczema is still our most difficult problem; only a *total* approach, considering *every* angle will give results in more severe cases.

The various forms of atopic dermatitis are skin manifestations of a constitutional disorder which also provides the background for bronchial asthma, hay fever and certain other so-called allergic disturbances. Unfortunately, not much is known about what constitutes this abnormality.

The most common forms of atopic dermatitis are the following:

1. Atopic infantile eczema.[1] *

2. Disseminated atopic dermatitis (neurodermatitis). This form of eczema is observed most often in the adolescent or younger adult, but it may occur at any time of life. It is a dry, chronic eczema which favors the flexor surfaces of the body, especially neck, antecubital and popliteal areas and wrists. In more severe cases, the eczema may also cover the face and scalp or any other part of the body; at times the whole skin may be involved, and we are dealing with a generalized atopic dermatitis. Most common complications are secondary infections. Atopic dermatitis may be accompanied by hayfever, asthma and occasionally by cataracts.

3. Localized atopic dermatitis (lichen simplex chronicus circumscriptus).

From the Department of Dermatology, Marshfield Clinic, Marshfield, Wisconsin, and the Division of Dermatology (director, Dr. H. E. Michelson), University of Minnesota Medical School.

Presented at the annual meeting of the Minnesota State Medical Society, Duluth, Minnesota, June 13, 1950, under the auspices of the American College of Allergists.

*Copies of these lectures on allergic dermatitis, urticaria, and drug eruptions are still available upon request.

*Infantile eczema will *not* be discussed in this paper.

Lichen simplex chronicus circumscriptus is found mostly in nervous, highstrung persons between forty and sixty years of age, but may also occur at other ages, especially around puberty. This condition consists of isolated patches of a chronic dry eczema. Favorite locations are the nape of the neck, vulva and perineal regions in the female, and outer ankles, forearms, scrotum, perineum and anus in the male. Usually only one or a few patches are present. The pruritus is very marked, and the condition may cause discomfort out of all proportion to the objective findings.

4. Moist forms of atopic eczema, especially some cases of "dysidrotic" eczemas of hands and feet, and also some cases of "nummular eczema." The relationship of these forms of eczema to the atopic constitution is still controversial.

Allergic Concept of Atopic Dermatitis

Atopic dermatitis embraces those forms of dermatitis that are associated with atopic sensitivity. Atopic sensitivity of the skin, among other things, is characterized by immediate whealing reactions to tests. Immunologically, it is identical with the anaphylactic type of sensitivity. The antigens are usually proteins. Free antibodies often can be demonstrated in the blood stream. The shock organ of anaphylactic sensitivity in the skin is the vascular-connective tissue layer. A dermoepidermal sensitivity apparently also exists in these individuals.[6]

It would be wrong to assume that sensitization phenomena are the only, or even most important factors, in atopic dermatitis.

Role of Allergy in Atopic Dermatitis.—It would be folly to rely on positive skin tests to find the "cause" of atopic eczema. Scratch and intradermal tests may be helpful in regard to environmental allergens. A careful history and analysis of the case will not infrequently indicate some definite sensitivity to house dust, feathers, molds or pollens, or other environmental allergens. Food tests are notoriously unreliable, especially when done as intradermal tests. On the other side, we must always be aware that a negative skin test does not exclude sensitivity to that particular antigen. Some patients with atopic dermatitis are sensitive to human dandruff and human skin.[8] The clinical importance of these observations has not been determined as yet.

Psychogenic Factors

This aspect of atopic dermatitis has been emphasized, perhaps too much, in recent years. Nervous and psychologic factors play an important part in some instances.[5] Many patients with atopic dermatitis are of the hyperactive and of the hyperreactive type. The nervous tension of these patients is usually apparent; many suffer from hyperhydrosis of the hands and feet.

Psychologic problems play a greater role in the severe generalized cases, especially with acute flare-ups involving the face. Often we find those telling "neurotic excoriations." Walsh and Kierland[11] consider the following characteristic emotional patterns most prominent in generalized atopic dermatitis. Suppressed hostility toward the mother or to another supporting figure was present in most of their cases. The skin was apparently utilized in these patients as the site for expressing strong unconscious conflict relating to exhibitionistic tendencies and a frustrated desire for love and affection.

In those patients whose dermatologic reaction had begun in childhood, the emotional disorder appeared deeply rooted in the personality, and striking results from psychotherapy were not obtained. In that group whose dermatitis began as adults, however, with one exception, improvement in the emotional disorder was paralleled by a complete or nearly complete clearing of the dermatologic reaction.

Other cases indicating psychologic conflicts are the circumscribed lichen simplex chronicus. According to Lewis and Cormia,[4] the psyche unconsciously selects any convenient locus minoris resistentiae; the conflicts are expressed by the type of lesions as well as by the localization.

Treatment of Atopic Dermatitis

Treatment has to consider all or some of the following:**

1. Proper topical treatment.
2. Management of pruritus.
3. Allergic factors.
4. Psychologic factors.
5. Endocrine factors.
6. General supportive measures.

Here I shall discuss only a few newer remedies.

**"Management of Allergic Dermatitis" has been discussed by the author recently in Postgraduate Medicine 8:126-130, August, 1950; the reader is referred to this paper.

Antihistamines.—To be frank, the antihistamines have been disappointing. At least they did not live up to expectations. What *can* we expect from them? In urticaria they are very helpful, and the pruritus can be controlled in many instances. However, there are some cases which do not respond. For these it may be necessary to shift from one antihistamine to another. What is the preferred antihistamine? I do not know. At present I still favor Pyribenzamine or Neoantergan during the day, and Benadryl at night. If these fail, then I prescribe an antihistamine of a different constitution, one of the newer piperazine compounds, such as Perazil or Di-Paralene. These latter drugs have a long-acting effect. In atopic dermatitis and in those cases of contact dermatitis which are connected with swelling and severe itching, we also use antihistamines. They relieve the pruritus more or less. Sometimes but only sometimes, they are very helpful, especially in the acute flare-ups of atopic dermatitis and in poison ivy dermatitis. They do not affect the course of the dermatitis, but the pruritus can be suppressed almost completely in some instances. In severe cases, the parenteral use of antihistamines is often more effective. We use Histadyl 20 to 30 mg. twice or three times a day intramuscularly, or Benadryl 30 to 50 mg. intravenously twice a day. The latter should be injected very slowly. It should not be used in hypertensive patients. The efficacy of these drugs is not entirely due to their "antihistaminic" effect. Many of the antihistamines have also an anesthetic, sedative and antispastic action.

Antihistaminic Ointments.—The antihistaminic ointments are a welcome and helpful addition to the topical treatment of certain itching dermatoses. However, these ointments are used too indiscriminately and often in the wrong place. It is important to know *when* and *for what condition* to use them. They are helpful mostly in chronic pruritus ani and vulvae and in those patches of dry eczema which we dermatologists call lichen simplex chronicus. There are a few more occasions where they may help, such as, an itchy subsiding atopic or contact dermatitis, drug eruptions, insect bites. Do *not* use them in an acute or weeping dermatitis.

Which anthistaminic ointments are preferred? There are numerous such preparations available, and many more on trial. I do not believe there is too much difference between them. Ointments with Histadyl, Trimeton, Thephorin, Benadryl and Pyribenzamine seem to work equally well. I have also had experience with two newer preparations which are not yet available commercially—Perazil cream and Chlorotrimeton cream. Both are well tolerated and compare favorably with other antihistaminic ointments.

There is one drawback to all antihistaminic ointments. Sensitivity to them occurs not infrequently, perhaps as high as 5 per cent in some instances. We must become aware of the danger of sensitization and warn the patient to stop treatment at the first sign of irritation. Otherwise the patient may not realize that he has become allergic to the ointment, because antihistaminics, as well as other anesthetic ointments, often still afford some relief from pruritus even after the patient has become sensitized.

ACTH and Cortisone.—Other new drugs of promise in the treatment of allergic dermatitis are ACTH (adrenocorticotropic hormone) and Cortisone. They are, at times, quite effective in atopic dermatitis and exfoliative dermatitis, and also chronic urticaria. However, the effect in these conditions usually is not as prompt and dramatic as in rheumatoid arthritis or in asthma.

Desensitization in Atopic Dermatitis.—Desensitization in atopic dermatitis is still a controversial subject. It certainly should not be a routine measure, but in persistent, long-standing cases of generalized atopic dermatitis and also in some instances of lichen simplex chronicus, cautious desensitization with a house dust extract is at times very beneficial. In recent years I have preferred a mixture which includes also barn dust, molds, bacterial and fungus antigens. Naturally if there are other known, specific environmental allergens such as ragweed, desensitization may be tried with these alone or in addition to the general mixture. Desensitization in atopic dermatitis is at least as difficult and unpredictable as in asthma. Proper dosage can be established only by experience; customarily we start with a 1:1,000,000 or 1:10,000,000 dilution. At times this must be diluted even more. An overdose is usually recognized by itching and an acute flareup within twenty-four hours after the injection. This is always an indication to reduce the dose to at least one-fourth or even less of the preceding one.

Overdosage may produce severe and long-lasting aggravations.

Contact Dermatitis

Contact dermatitis is usually caused by external contacts with what we call simple chemicals. We distinguish between *toxic* (nonallergic) and *allergic* contact dermatitis.

Toxic contact dermatitis is more often encountered in industrial dermatitis where the use of strong chemicals, solvents, cleaners and abrasives may lead to such an occurrence. In nonindustrial cases, contact dermatitis is usually of the allergic type, although there are also numerous nonallergic contributing factors.

Allergic Contact Dermatitis

Although the allergic nature of this form of contact dermatitis has been recognized for a long time, the mechanism is still not fully understood. Contact dermatitis is provoked by so-called simple chemicals such as inorganic compounds or anilin dyes, in contrast to the highly complex protein allergens encountered in atopic diseases. Apparently the actual antigen is a combination of a simple chemical with a protein. The "simple chemical" is called a hapten. This term denotes that small molecular portion of an antigen which confers upon it its immunologic specificity. The protein used for this combination is probably one of the body's own proteins, but in some instances is perhaps derived from the bacterial flora of the skin.

The complexity of modern life brings all of us in more contact with chemicals that are potentially sensitizers. There are always new sources of sensitization; some produce a rather typical picture.

Contact dermatitis from nylon stockings produces a rather characteristic picture of a weeping dermatitis behind the knees and in front of the ankles. The rest of the leg usually does not show any signs of inflammation, or only a mild dermatitis is present.

Sensitization to DDT appears to be rare when one considers the widespread use of insect sprays containing this chemical. Hollander[3] reports a very acute dermatitis of the exposed parts from this source. I have observed a few cases of dermatitis from such insect sprays. They presented a less severe dermatitis of face and neck, combined with a papular itching eruption of arms and legs.

Dermatitis of the feet is too often considered dermatophytosis or "athlete's foot." Contact dermatitis from shoes and stockings is not infrequent. A sharp borderline of the dermatitis above the ankle is very suggestive.

Furthermore, in contact dermatitis of the feet, the webs between the toes are usually spared in contradistinction to dermatophytosis.

Nail polish, as a source of contact dermatitis, has been recognized for many years but still is often overlooked by the physician. Nail polish dermatitis usually occurs in patches of a more chronic eczema. Preferred locations are the eyelids, the cheeks and the neck. Practically never is it seen on the fingers.

A new source of "cosmetic dermatitis" has been recognized by Furman, Fisher and Leider.[2] Rubber pads or sponges used to apply face powder apparently are a rather frequent cause of contact dermatitis of the face in young women.

Another contact dermatitis very important in the Midwestern area is contact dermatitis from weeds, especially ragweed. This dermatitis covers the exposed areas—face, arms and legs around the ankles; in severe cases the whole body may be afflicted. In many instances the dermatitis persists more or less all year around, because the patient is often a farmer and contacts weed infested grain or feed all the time. Even so, there is usually an aggravation from the end of August to the end of September.

In this form of ragweed dermatitis, the patient is allergic to the *oleoresins* of the plant and not to the protein fraction. Therefore, scratch tests and intradermal tests are negative, but a patch test with the plant or the pollens or an oleoresin extract from the weed produces a dermatitis.

It is important to recognize the etiology of this dermatitis, because the patient can be helped only by avoidance of contact, or by desensitization.

That brings us to the question of desensitization in contact dermatitis. Theoretically, it can be done, but it is practical only in plant dermatitis especially from poison ivy or from weeds. How much can we expect? Not the impossible. If a farmer is highly sensitive to ragweed, the chances are we will not be able to desensitize him to such a degree that he will be able to continue as a farmer during the ragweed season. If his

TABLE II. DIAGNOSIS OF INFECTIOUS ECZEMA

History.—An eruption preceded, complicated or flared-up by infection is suggestive.
Suggestive Morphologic Criteria.—Signs of infection. Sharply outlined lesions, especially with round and polycyclic borders.
Bacteriologic Diagnosis.—Smears and cultures are difficult to evaluate because of the ubiquity of staphylococci and streptococci. Negative results are not convincing either, as they may be due to existing allergy.
Skin Tests.—Severe delayed reactions to bacterial antigens are suggestive, especially when provoking flare-ups.
Focus of Infection.—Suggestive.

degree of sensitivity is less, then it may be possible to raise his level of tolerance to such an extent that he can continue most of his chores if he is careful to stay away from threshing and all excessive exposure to ragweed. How about poison ivy dermatitis? Prophylactically, parenteral or oral desensitization is helpful in many cases, but never give injections of a poison ivy extract during the acute phase of the dermatitis.

Infectious Eczemas

It is only recently that we have recognized, or rather rediscovered, the great role of infectious factors in eczemas. In a general way we may say that an infectious eczema is due to a combination of an infection and an eczema. This association may occur in several ways.

The causative bacteria in infectious eczemas are mainly staphylococcus aureus and streptococcus hemolyticus. However, Escherichia coli, the proteus, the pyocyaneus, and the diphtheria bacillus, as well as others, may also cause infectious eczemas.

The diagnostic criteria of infectious eczema are presented in Table II.

The most common forms of infectious eczema are perhaps the following:

1. Infectious eczematoid dermatitis; this means an acute weeping dermatitis around an infection of the skin, a draining sinus or following an infected injury.
2. Infectious eczema of the ears and behind the ears. In this case, the infection may develop secondarily to a contact dermatitis from metal bows of glasses, or to a seborrheic dermatitis.
3. Infectious eczema of the lower legs, originating from a stasis dermatitis, a varicose ulcer or a lichen simplex chronicus, with or without "id"-like generalized eruption.
4. Infectious eczemas of the hands.
5. Infected contact dermatitis.
6. Infected infantile eczema.

Table III shows the main sources of infection.

TABLE III. SOURCE OF INFECTION

Local Infection (skin)	*Focal Infection or Infestation*
Furuncle	Teeth, tonsils
Draining abscess	Gallbladder
Draining ear	Phlebitis
Impetigo	Respiratory tract
Intertrigo	Gastrointestinal tract
Paronychia	Cervix
Angular stomatitis	Prostate
Dermatophytosis	Monilia infection of the vagina
Moniliasis	Monilia infestation of intestines

The principles governing the treatment of infectious eczema are outlined in Table IV.

TABLE IV. TREATMENT OF INFECTIOUS ECZEMA

1. Evaluation of factors.
2. Local treatment of infection and eczema.
3. Systemic treatment of infection.
4. Correction of contributing factors. (Contact sensitivities, food or environmental allergies, anemia, impaired circulation, diabetes.)
5. Supportive treatment. (Vitamins, liver extract, proteins, ultraviolet irradiation.)
6. Psychosomatic approach.
7. Removal of foci of infection.
8. Desensitization.
9. Non-specific therapy.

The detailed treatment of infectious eczemas has been outlined in another paper (see footnote on Page 38). Here I shall present only an evaluation of certain antibiotic and antiseptic ointments (Tables V and VI).

TABLE V. ANTIBIOTIC OINTMENTS

Antibiotic	*Recommendation*	*Reason*
Penicillin	Do not use.	Danger of sensitization
Tyrothricin	In less severe infections.	Not a very potent antibiotic, but rarely sensitizing.
Streptomycin	In selected resistant cases (e.g., otitis externa).	Usually inferior to bacitracin and aureomycin. Danger of sensitization.
Bacitracin	*Method of choice.*	Potent antibiotic, low sensitizing potential.
Aureomycin	Most potent antibiotic ointment; but: be Careful!	Sensitization index not yet established.

TABLE VI. ANTISEPTIC OINTMENTS

Antiseptic	*Evaluation*	*Remarks*
Ammoniated mercury 3% to 5%	Efficient and clean.	Watch for sensitivity.
Chloresium ointment	Efficient but messy.	Usually well tolerated.
Furacin	Good antiseptic, staining.	Do not use in eczema; potent sensitizer
Rivanol 0.5% to 1%	Good antiseptic, staining.	Watch for sensitivity during treatment.
Vioform 1% to 3%	Good antiseptic, slightly staining.	Usually well tolerated in eczemas.
Sulfonamides 5% to 10%	At times very efficacious.	Use with greatest care. Potent sensitizers. Sulfadiazine least dangerous.

Apply antiseptic ointment only to *local area* of infection, not to Id-like generalized eruption.
Remember: All antiseptics are sensitizers.

From these last tables it may appear that I am stressing unduly the danger of sensitization. But this is not the case. Patients with infectious eczemas are much more prone than others to develop sensitivities to drugs, especially to ointments. All antiseptics are sensitizers, some more than others.

Drug Sensitivity

Whenever a patient with an infectious, or any other, eczema develops a generalized eruption or an aggravation, think of drug sensitivity.

The most important therapeutic measure is immediate cessation of the suspected medication. Symptomatic treatment should be given both externally and, especially, internally. What to do depends on the symptoms. In a contact dermatitis we start treatment with wet compresses and mild lotions. In most other drug eruptions there is little need for external treatment except in the presence of marked pruritus. In this case we use an antipruritic lotion as follows:

Calmitol 5%
Zinc oxide 10%
Calamine lotion q.s.

or an antihistaminic, or at times an anesthetic ointment.

Fluids should be given freely in most drug eruptions. Laxatives, especially salines, are indicated. Antihistamines are frequently of help in relieving the pruritus. If oral medication fails, we use Benadryl intravenously, or Histadyl intramuscularly.

Desensitization to drugs is not used very widely because most drugs can be avoided. However, in some instances, desensitization is indicated and effective, especially in cases of sensitivity to antibiotics such as penicillin and streptomycin. This applies especially to physicians and nurses who have become sensitized and cannot avoid contact with these antibiotics.

Treatment of Serum Sickness Type of Reaction.—This condition is often rather distressing. The patient has a more or less rough time for five to seven days, then recovers usually rapidly and spontaneously. Antihistamines are usually only helpful in relieving the pruritus, but do not have much effect on the course of the condition otherwise. My favorite medication is calcium gluconate intravenously, 10 to 20 c.c. twice a day, given very slowly.

The intravenous use of procaine, (1 gram in 1,000 c.c. of normal saline) has been very helpful in cases of serum sickness.[10] However, this procedure is not completely harmless; especially in a drug eruption one should think twice before injecting 1 gram of another drug. Furthermore, the fear that intravenous procaine would be contraindicated in serum sickness from procaine penicillin cannot be dismissed completely. It is true that the overwhelming majority of patients who have become sensitized to procaine penicillin are sensitive to penicillin only, and not to procaine, but occasionally the patient is sensitized to the procaine fraction. In such a case an intravenous injection of procaine would be very dangerous. Recently, Schiff and Schiff[7] reported an anaphylactic reaction following repeated injections of intravenous procaine.

Prevention of Drug Eruption.—As long as we have to use drugs, we cannot help causing drug eruptions. But there are certain things we can do to lower the incidence of these reactions.

1. Whenever possible, use drugs that have a low sensitizing potential. For instance, avoid penicillin preparations suspended in oil and beeswax. Reactions from these mixtures occur about twice as often as when aqueous suspensions are used.

2. Do not use a relatively dangerous drug such as gold, or sulfonamides, if more harmless drugs are available.

3. Warn your patient about the possibility of the development of drug sensitivity so that he may stop the drug immediately when symptoms appear.

4. Sometimes reactions from insulin or liver extract can be prevented when antihistamines are given before or with the injection. S. Wm. Simon[9] reduced the number of penicillin reactions by mixing penicillin with Decapryn: 100,000 units of crystalline potassium penicillin G were dissolved in 1 c.c. saline solution which contained 5 mg. of Decapryn Succinate.

Once a patient has developed a drug reaction, the following suggestions may prevent it from turning into a more serious condition:

1. The drug must be stopped at once, and one must make sure that the patient does not take a single additional dose of that particular drug.

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BASIC FACTS ABOUT GALL-BLADDER SURGERY FOR GENERAL PHYSICIANS

DAVID P. ANDERSON, M.D., F.A.C.S.
Austin, Minnesota

AN address entitled "Surgery of the Gall Bladder" was delivered at the second annual meeting of this society on August 3, 1893, by Dr. W. J. Mayo of Rochester. In 1899, Dr. Mayo again talked before the society on the subject of gall-bladder surgery, and his presentation was discussed by Dr. J. B. Murphy of Chicago. Dr. Mayo's observations on surgery of the gall bladder and bile ducts in 1899 were published in the *Annals of Surgery* of that year.[4] It is of interest to note that as early as 1899 he had performed the new operation of cholecystectomy four times and that he had successfully accomplished a cholecystoenterostomy with the use of a Murphy button. These early accomplishments, all of which were apparently presented before this society, were climaxed by Dr. Mayo's classical report in 1903 of 311 operations for benign gall-bladder disease with an astounding mortality of only 2.5 per cent.[3] Cholecystectomy was performed thirty-three times with only one death, and thirty-one operations for common duct stone were reported with only one death.

Since these early days of gall-bladder surgery, cholecystectomy has proved to be a highly successful operation, as Dr. Mayo so correctly predicted. We now know that cholecystectomy, with or without choledochostomy, when performed for colic due to gallstones, is followed by a very high percentage of satisfactory results. However, all too many failures still occur following biliary tract surgery. Some failures, or incomplete relief of symptoms, may be attributed to irreparable damage to the liver and bile ducts because of neglected, long-standing disease prior to operation. Other unsatisfactory results after operation on the gall bladder and bile ducts are the direct responsibility of the physician, and are too often due to the lack of application of proven basic facts in selecting patients for the operation and in making certain that the operative procedure answers all of the problems that may be present.

Whether or not he does his own gall-bladder surgery, the general physician must assume responsibility for the success or failure of the surgical treatment of biliary tract disease. He has the first opportunity to see the patient, often during the significant acute colic, and the best chance to evaluate properly the symptoms and clinical findings. He is the one who advises surgery. If his judgment is poor but his advice followed, many unsatisfactory results will attend. He frequently performs his own surgery or selects the attending surgeon, and, in so doing, is directly or indirectly responsible for any technical surgical failures. It is thus essential that the general physician be thoroughly acquainted with the basic rules to be followed in selecting and preparing patients for gall-bladder surgery, and he must have at least a good idea of what constitutes a safe and adequate operation.

Read at the annual meeting of the Southern Minnesota Medical Association, Mankato, Minnesota, September 11, 1950.

TABLE I. BENIGN DISEASE OF THE BILIARY TRACT, ACUTE AND CHRONIC

Operations	Number	Hospital Deaths	Mortality %
Cholecystostomy	7	..	..
Cholecystectomy	149	1	0.7
Cholecystectomy and choledochostomy	55	3	5.5
Choledochostomy	9	..	..
Total	220	4	1.8

It is our purpose today to discuss certain basic facts about surgery of the gall bladder and bile ducts that must be understood if we hope to continue to improve our results. As a background for this discussion, we have reviewed our own biliary tract surgery. This review, for the sake of completeness, includes all operations wherein the biliary tract was either directly or indirectly involved.

Statistical Data

As shown in Table I, we have performed 220 operations for acute and chronic benign disease of the biliary tract with four deaths. This mortality rate of 1.8 per cent is reasonably satisfactory, but we believe that it can and should be reduced. Reports from the Mayo Clinic[5] and the Lahey Clinic[1] record operative mortality rates of slightly less than 1 per cent in surgery of benign biliary tract disease.

TABLE II. SUMMARY OF HOSPITAL DEATHS IN OPERATIONS FOR BENIGN BILIARY TRACT DISEASE

Patient Sex-Age	Diagnosis	Operation	Complications	Interval
G.N. M-83	Acute cholecystitis; perforation of gall bladder and duodenum; peritonitis; choledocholithiasis with obstructive jaundice	Choledocholithiotomy; cholecystectomy, and closure of duodenal perforation	Wound disruption (healed); broncho-pneumonia	27 days
K.K. F-73	Chronic calculous cholecystitis and choledocholithiasis without jaundice	Cholecystectomy and choledocholithiotomy	Acute coronary occlusion	24 hours
J.W. F-60	Chronic calculous cholecystitis and choledocholithiasis with obstructive jaundice	Cholecystectomy and choledocholithiotomy	Residual common duct stone; suppurative cholangitis	6 weeks
A.K. F-42	Chronic calculous cholecystitis	Cholecystectomy	Massive pulmonary embolus	8 days

A summary of the four postoperative deaths in our series is shown in Table II and is self-explanatory. Suffice it to say that the following additions or corrections now have been made in our technique in the hope of reducing postoperative deaths: (1) controlled anticoagulant therapy with dicumarol is used routinely; (2) exploration of the common duct is routinely accompanied by dilatation of the ampulla of Vater with Bakes dilators, and if there is any question of its patency, the ampulla is explored through a transduodenal incision; and (3) no compromise is made for the sake of speed or convenience in our routine closure of abdominal incisions with stainless steel wire sutures.

TABLE III. OPERATIONS FOR BENIGN BILIARY TRACT DISEASE INCIDENTAL TO OTHER LESIONS

Operation	Number	Hospital Deaths
Subtotal gastrectomy (ulcer); cholecystectomy	2	..
Subtotal gastrectomy (Ca); cholecystectomy	1	..
Subtotal gastrectomy (ulcer); cholecystostomy	1	..
Subtotal gastrectomy (ulcer); choledochostomy	1	1
Subtotal gastrectomy (Ca); cholecystectomy and choledochostomy	1	1
Total gastrectomy and colectomy (Ca); cholecystostomy	1	..
Ileocolectomy (Ca); cholecystectomy	1	..
Incarcerated diaphragmatic hernia; cholecystectomy	1	..
Total	9	2

TABLE IV. SUMMARY OF HOSPITAL DEATHS IN OPERATIONS FOR BENIGN BILIARY TRACT DISEASE INCIDENTAL TO OTHER LESIONS

Patient Sex-Age	Diagnosis	Operation	Complications	Interval
P.G. F-77	Carcinoma of stomach; chronic cholelithiasis with cholecystoduodenal fistula and complete stricture of the ampulla Vater	Subtotal gastrectomy; cholecystectomy with excision of cholecystoduodenal fistula and stomach en bloc; choledochostomy and division of ampulla stricture	Uremia	5 days
J.L. M-32	Chronic duodenal ulcer with massive hemorrhage; common duct obstruction with jaundice, inflammatory, due to proximity of ulcer to the ampulla Vater	Subtotal gastrectomy and choledochostomy	Massive pulmonary embolus; small, localized left subphrenic abscess	10 days

A summary of operations on the gall bladder and bile ducts incidentally performed, either electively or from necessity, during the course of other operations is shown in Table III. The two postoperative deaths in this small series are summarized in Table IV. It can readily be seen that the deaths were not attributable to the biliary tract surgery and that this additional surgical procedure constituted a very necessary part of the total operation.

On seven occasions we have encountered primary malignant disease of the biliary tract or pancreas. The operations performed are shown in Table V, and the three postoperative deaths in this group are summarized in Table VI.

TABLE V. OPERATIONS FOR MALIGNANT DISEASE OF THE BILIARY TRACT AND PANCREAS

Operation	Number	Hospital Deaths
Cholecystectomy, choledochostomy and partial hepatectomy (Carcinoma of gall bladder)	1	..
Choledochojejunostomy (Carcinoma of pancreas)	1	..
Choledochostomy (Intraductal carcinoma)	3	1
Radical pancreatico-duodenal resection (Carcinoma of ampulla Vater)	2	2
Total	7	3

We have operated upon three patients, all children, with traumatic rupture of the liver and bile ducts. All recovered after varying periods of drainage from the resulting biliary fistulae.

TABLE VI. SUMMARY OF HOSPITAL DEATHS IN OPERATIONS FOR MALIGNANT DISEASE OF THE BILIARY TRACT

Patient Sex-Age	Diagnosis	Operations	Complications	Interval
L.J. F-51	Metastatic carcinoma of liver; primary site; intraductal or pancreas	Exploration and choledochostomy	Carcinomatosis	5 weeks
W.S. F-63	Adenocarcinoma of ampulla Vater	Radical pancreatico-duodenal resection	Re-admitted with late jejunal obstruction due to internal pancreatic fistula	2½ months
R.K. M-63	Adenocarcinoma of ampulla Vater	Radical pancreatico-duodenal resection	Uremia and hepatic insufficiency due to intraductal liver metastases	19 days

Selection of Patients for Gall-bladder Surgery

The most important single factor in improving the results of surgery of the gall bladder and bile ducts is the proper selection of patients for operation. Cattel[2] has shown that patients who have continuing symptoms after cholecystectomy frequently have some other lesion that had been present at the time the cholecystectomy was performed. He states, "The good results are largely dependent upon the care with which these patients are selected for operations, in order to make certain that one is operating upon a patient with symptoms relievable by removal of the gall bladder."

We believe that operations on the gall bladder should be restricted to those patients with gallstones. This does not mean that we can always make an accurate preoperative diagnosis, or that we do not occasionally remove a diseased noncalculous gall bladder. It does mean, however, that we do not advocate surgery for the patient with dyspepsia, vague distress and food intolerances, with x-ray evidence of nothing more than a "poorly functioning" gall-bladder.

The patient with acute cholecystitis or typical acute gallstone colic will almost invariably receive relief from an adequate gall-bladder operation. All such patients should be treated surgically if they are reasonable operative risks. Evidence of gallstones by x-ray is sought in elective cases, and persistent non-filling of the gall bladder on cholecystogram, in a patient with a good history of gall-bladder colic, is taken as presumptive evidence of calculous disease. Preferably all elective patients, but particularly those with atypical symptoms, with or without x-ray evidence of gallstones, should be investigated thoroughly before a decision is made to operate. If this is not done, we will invariably overlook small duodenal ulcers, hiatal herniations and numerous other lesions which may simulate gall-bladder disease.

Selection of Gall-bladder Operations

We must not only select patients for gall-bladder operation but we must perform the type of operation that is best for the particular needs of the patient. It is undeniably true that cholecystectomy is an excellent operation, but the surgeon who treats all gall-bladder disease by cholecystectomy alone is doomed to many failures. In addition to being adequate, the operation must also be safe.

Cholecystostomy is a safe operation, as Dr. W. J. Mayo demonstrated in 1903. However, it is not followed by complete relief of symptoms in a high enough percentage of patients to justify its use except for poor-risk patients or whenever the usual anatomical landmarks are obscured by an inflammatory process. We employed cholecystostomy in approximately 3 per cent of the operations in this series, and with increasing experience we are using it less and less.

Cholecystectomy alone is a satisfactory operation when the disease process is limited to the gall bladder. It is a safe operation, provided the surgeon avoids the pitfalls that lead to technical failures. A careful anatomical dissection under direct vision is probably the best assurance of a safe cholecystectomy. We always clearly expose the common duct and the hepatic duct as well as the cystic and hepatic arteries. We believe that the cystic duct should be ligated flush with the common duct and opened for exploration if necessary, in order to avoid the rare but distressing complication of a retained cystic duct stone. We carefully peritonealize the gall-bladder fossa, using a 0000 chromic suture, and interpose omentum, if necessary, in order to prevent adherence of the pylorus and duodenum to the gall-bladder fossa.

Choledochostomy, usually with cholecystectomy, is a very essential part of the surgeon's armamentarium in treating biliary tract disease. It is

now generally recognized that about 15 per cent of patients operated for gallstones will also have stones in the common duct, and that the common duct must be explored in one-third to one-half of all gall-bladder operations in order to avoid overlooking silent common duct stones. In our series we explored the common duct in approximately one-third of the operations for benign disease. Stones were found within the duct in about one-half of the patients explored.

The indications for exploration of the common duct have been repeatedly outlined in the surgical literature by various authorities. The procedure *per se* adds very little to the morbidity of the cholecystectomy, and the gratifying results obtained when "silent" stones and other lesions of the common duct are detected and treated fully justify its frequent use. We have found the graduated Bakes dilators safe and satisfactory for completing the exploration of the common duct and dilating the ampulla of Vater. When one has passed a 7 or 8 mm. dilator through the ampulla, he is much more confident that no residual stones remain within the duct and that any small fragments or debris will readily pass through the ampulla.

When it is difficult or impossible to pass a probe or dilator through the ampulla of Vater, we explore the ampulla through a transduodenal incision. This is often the only way that one can definitely diagnose an impacted stone at the ampulla, a fibrosis of the ampulla, or, rarely, a malignancy of the lower end of the common duct.

Conclusions

We have discussed some of the basic facts about gall-bladder surgery that must be kept in mind if we hope to continue to improve our results. We have especially emphasized the fact that we should almost invariably restrict operations on the gall bladder to patients with gallstones, and in elective cases a thorough preoperative investigation is advisable to detect co-existing lesions which, if untreated, will continue to cause symptoms. The operative procedure selected should be conducted safely and must answer all of the problems that may be present.

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SKIN ALLERGY

(Continued from Page 42)

The best way to make certain is to tell the patient to refuse further drugs, because he may otherwise receive one or two more doses before the "stop order" on the hospital order sheet is actually carried out.

2. When the patient has become sensitized to drugs, we ought to tell him what he is sensitive to, so that he can avoid taking this drug in the future. Those patients who have been alerted about them are best protected against drug eruptions or their serious consequences.

The physician who develops consciousness of drug eruptions will be of great help to his patients and will save himself a lot of grief.

All in all, we have not made too much progress in recent years in the management of allergic skin diseases. But we have a better knowledge of many underlying factors which makes treatment of these perplexing conditions a somewhat easier job.

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NATIONAL PROGRAM IN REHABILITATION MUST BE EXPANDED

FRANK H. KRUSEN, M.D.
Rochester, Minnesota

PHYSICAL MEDICINE and rehabilitation are combined today. The American Medical Association now has a Council on Physical Medicine and Rehabilitation. In 1949 it established a permanent Section on Physical Medicine and Rehabilitation. Furthermore there is now an American Board of Physical Medicine and Rehabilitation which qualifies physicians in this new medical specialty.

Physical medicine and rehabilitation includes the employment of physical therapy, occupational therapy, psychosocial adjustment and vocational retraining in an attempt to achieve maximal function and adjustment of the handicapped or disabled individual and to prepare him physically, mentally, socially and vocationally for the fullest possible life compatible with his abilities and disabilities.

There is extreme need for expansion of the national program in rehabilitation.

In 1949, a group of more than 800 medical and community leaders, meeting in Washington, concluded that, "To accomplish planned convalescence and rehabilitation for those partly disabled by chronic disease, we need increased understanding among physicians and others serving the chronically ill and aged of the possibilities and techniques of rehabilitation, and an increased number of trained rehabilitation, medical and supporting personnel."

They estimated that to staff an adequate system of rehabilitation facilities in this country it would be necessary to recruit and train 2,500 to 3,000 medical specialists and 10,000 to 12,000 more physical therapy and occupational therapy technical workers, as well as several times this number of additional non-medical rehabilitation personnel such as vocation rehabilitation counselors and social service workers.

They concluded further that "Each year about 250,000 men and women are so disabled by injury or disease that they become incapable of holding a job or of enjoying a normal life"; that "altogether there are many million handicapped people in the United States today"; and that "surveys have indicated that 1,500,000 of them—not including veterans disabled in service—would benefit greatly from rehabilitation services."

To provide services, teaching and research in rehabilitation for this enormous number of handicapped persons offers a tremendous challenge to our voluntary health agencies.

Our national leaders have urged extension of rehabilitation programs.

The number of civilian casualties far exceeds the number of war casualties. Some 265,000 men were permanently disabled as a result of combat injuries during World War II, but 1,250,000 civilians were permanently disabled by accidents alone in the corresponding four years.

"The investments in rehabilitation is an investment in the greatest and most valuable of our possessions, the conservation of human resources." This was the opinion of Bernard M. Baruch when he founded the Baruch Committee on Physical Medicine in 1944.

It has been my privilege to serve as chairman of the Baruch Committee on Physical Medicine and Rehabilitation and to aid in the establishment of research centers in physical medicine and rehabilitation and training programs for medical specialists in this field. In 1949, when I issued the report of the Baruch committee I was able to say that, "Although the full effect of the research and training of physicians will not be felt for some time, there have been immediate effects in the rehabilitation and medical care of thousands of disabled veterans and even more disabled civilians."

Our voluntary health agencies should provide leadership in rehabilitation.

It is the effective voluntary groups like the Baruch Committee, the American Red Cross, the National Foundation for Infantile Paralysis and the Minnesota Society for Crippled Children and Adults which are providing the inspired leadership in extending aid to the handicapped, unequaled in any other country.

More community rehabilitation services and centers are needed.

A subcommittee of the Baruch Committee pub-

From the Section on Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, Minnesota.

lished a report in 1946 giving a basic blueprint of an ideal community rehabilitation service and center. In the ideal community rehabilitation center, envisioned by the committee, patients would be derived from a number of sources. The committee envisioned a traveling field clinic to provide rehabilitation service in rural areas. This field clinic could send certain patients to the rehabilitation center. Other sources of patients would be physicians, self-reference, social and governmental agencies, industry, labor and the civilian hospital.

The program of physical medicine should include physical therapy, occupational therapy and physical retraining for orthopedic, medical, neurologic and other types of patients. In the psychosocial program actual treatment and adjustment would be provided; and in the program of vocational education there would be provision for vocational guidance and testing, vocational retraining and special educational projects.

Also, the Baruch Committee envisioned the need for a laboratory of research in rehabilitation in conjunction with such a center. There should be a dormitory for patients who are unable to travel.

This type of rehabilitation center provides an active and living program which will combat any tendency toward chronic invalidism. All patients are guided toward self-sufficiency and independence—the more fortunate returned to full employment and those with limited disabilities to selective employment. The more seriously handicapped would be provided at least with the opportunity for self-support through the medium of the sheltered workshop, and the severely handicapped with a homebound program of activities which would help to make them self-sufficient.

Rehabilitation centers based on this plan of the Baruch Committee are beginning to spring up all over the United States. The St. Paul Rehabilitation Center is a link in this important chain. This is a major project of the Minnesota Society for Crippled Children and Adults which obtains its funds through its Easter Seal campaign. The St. Paul Junior League and the Wilder Charity also aid in financing the center. It is therefore a democratic institution which belongs to all of those who contribute to its support on a voluntary basis.

Let me stress here that voluntary health groups must continue to support and extend the national rehabilitation program to all types of disabled persons. Every American citizen should give both financial and moral support to this program and all of us should demand that voluntary health agencies continue their activities unhampered.

If our nation is to be successful in providing adequate facilities for restoration of all our disabled citizens we must double, redouble, and redouble again our pioneering, voluntary programs to provide service to the handicapped; train personnel to care for the disabled; and provide medical research in methods of restoration following disease or injury.

In every rehabilitation program it is imperative that the medical service be integrated with educational training and placement.

The physician must share in the responsibility of rehabilitation from beginning to end, but the responsibility should not be his alone. Many other specially trained persons and interested citizens must join the rehabilitation team.

It is my earnest hope that all who read this will fight for a continuation of the activities of our voluntary health agencies in offering improved rehabilitation services for the sick and disabled.

WORLD HEALTH ORGANIZATION SETTLES QUARANTINE COMPLAINTS

Acting as an International Tribunal in arbitrating disputes between governments on quarantine problems, the World Health Organization has dealt with 40 cases since 1949, WHO records show.

In addition, the WHO Expert Committee on Epidemiology and Quarantine, meeting in Geneva, recently heard and settled two other complaints.

The international disputes arise, WHO has explained, from restrictions that may be imposed by governments on travelers or merchandise, sometimes in excess of the provisions of the various International Sanitary Conventions now in force.

WHO has undertaken the task of unifying and replacing these conflicting conventions by a single set of International Sanitary Regulations which will ensure maximum safety with minimum hindrance to trade and travel.

The new regulations will be submitted to the World Health Assembly (WHO's legislative body) in May, 1951, and will enter into force six months after being approved.

"PAINLESS" MYOCARDIAL INFARCTION

HOMER R. WARNER, M.D.
Minneapolis, Minnesota

TO WILLIAM HEBERDEN[4] should go the credit for recognition of the symptoms of disease of the coronary arteries. In 1818 he wrote:

"They who are afflicted with it are seized while they are walking (more especially if it be up hill and soon after eating) with a painful and most disagreeable sensation of the breast, which seems as though it would extinguish life if it were to increase or continue; but the moment they stand still, all this uneasiness vanishes. The pain is sometimes situated in the upper part, sometimes in the middle, and sometimes at the bottom of the os sterni, and often more inclined to the left than to the right side. It likewise very frequently extends from the breast to the left arm."

Although 132 years have passed since this was written, this characteristic pain is still the most important and often the only clue one has to the presence of coronary artery disease and the threat of sudden death that it carries.

It wasn't, however, until twenty years ago that our present concept of the mechanism of pain in coronary disease was placed on a sound basis by the work of Keefer and Resnik.[5] This was called the anoxemia theory. Painless myocardial infarction had been described prior to this time, and these authors proposed the following as an explanation: Pain can be absent in myocardial infarction either because the subject is relatively insensitive to pain or because the infarction occurs so slowly, only a few fibers being injured at a time, that the resulting sensation is insufficient to reach the level of consciousness.

The frequency with which painless myocardial infarction occurs varies considerably if one is to believe all that is written on the subject in recent years in medical literature. Boyd and Werblow,[2] in 1937, reported one-third of 125 consecutive cases of "coronary thrombosis" occurred without pain. (This paper was typical of many in which a careful distinction between coronary thrombosis and myocardial infarction was not made, the terms being frequently used interchangeably.) In marked contrast to this, was Kennedy's series of 200 autopsied cases of myocardial infarction from the records of the Peter Bent Brigham Hospital.[6] One hundred forty-two were classified as recent, and forty-eight of this group were discarded because an adequate history was not obtained at the time of the infarct. Of the ninety-four remaining, 92 per cent had definite pain, 4 per cent had discomfort only (usually a pressure sensation), and 4 per cent had no pain or discomfort.

A recent report by Behrmann, Hipp, and Heyer[1] supports the conclusion of Kennedy that painless myocardial infarction is relatively rare except under circumstances in which the reason for failure to elicit a history of pain is quite obvious.

A review of 200 consecutive cases of recent myocardial infarction seen from July 1, 1947 to July 1, 1950, at the Minneapolis Veterans Administration Hospital has been carried out with special effort to study the type of pain and the circumstances under which no history of pain at the time of infarction could be elicited.

Many of the patients were not admitted until several weeks after symptoms began. Despite this, an accurate description of the pain could still be elicited as the experience was indelibly impressed on the patient's consciousness in most instances. Included in the study were all cases in which a diagnosis of recent myocardial infarction was established either at autopsy or beyond reasonable doubt by serial electrocardiograms and other clinical criteria. The age distribution is shown in Table I.

TABLE I

Age	*Cases*	*Per Cent*
Under 35	5	2.5
36 to 45	16	8.0
46 to 55	80	40.0
56 to 65	80	40.0
66 to 75	17	8.5
Over 76	2	1.0

Of the 200 cases, 184 (92 per cent) had typical angina, usually described as "crushing," "pressing," "burning," or "severe aching" substernal or precordial pain. The adjective "sharp" was seldom used. In 120 cases, the pain radiated to one

From the Department of Internal Medicine, University of Minnesota School of Medicine, and the Veterans Hospital, Minneapolis, Minnesota.

Sponsored by the VA and published with the approval of the Chief Medical Director. The statements and conclusions published are the results of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

or both arms or into the neck, and in the rest of this group no radiation was described. Radiation into the lower extremities was not encountered.

In nine cases the pain was not typical, but in all of these but one, the symptoms were suggestive enough of myocardial infarction that the diagnosis was suspected immediately by the admitting physician. The exception was a man with substernal pain which was described as being made worse by his lying on his back, and a mistaken diagnosis of hiatus hernia was made in the admitting room. Others of this "atypical" pain group are listed below:

"numbness of the left hand accompanied by weakness and dizziness"
"severe indigestion and shortness of breath"
"severe sense of fullness in the epigastrium with shortness of breath"
"aching in the throat with radiation down the left arm"
"severe pain in the left arm radiating down the forearm"
"left chest pain described as pleuritic associated with epigastric pressure and vomiting"
"soreness in the left chest on the day after pneumothorax was initiated"

In the remaining seven cases, there was no mention of pain at the time of the infarct in the admission history. The reason for "no pain" in each of these instances becomes obvious with inspection of Table II in which they are summarized.

TABLE II

Comatose	1
Moribund	1
Under anesthesia	1
Aphasic	3
In shock	1
Total	7

Comment

Of course, it cannot be concluded from this series that acute myocardial infarction is never painless in an otherwise healthy individual. One, however, can safely say that it must be quite an unusual occurrence; so unusual in fact, that one need not think too seriously of myocardial infarction in a patient who develops congestive heart failure or an arrhythmia, for instance, unless a history of pain or a suggestive pain equivalent can be elicited. This is obviously not true, however, under circumstances in which pain either could not be appreciated (comatose, under anesthesia, et cetera), or could not be expressed (aphasic) by the patient.

That old myocardial infacts are found at autopsy in patients in whose record no pain has ever been described, is a well-known fact and not at all uncommon. This is best explained by the two factors mentioned by Keefer and Resnik in the report already referred to; namely, the rate with which the infarction takes place, and the patient's threshold for pain. To have an infarct of sufficient size to be recognized clinically occur without exceeding the threshold of pain must be quite rare, unless that threshold has been markedly elevated through the effect of some co-existing pathological state. In this series it did not occur.

Summary

1. Two hundred cases of recent myocardial infarction seen at the Minneapolis Veterans Administration Hospital were reviewed with special reference to the type of pain described when present and the circumstances under which no mention of pain was found in the record.

2. Of these, 92 per cent had classical angina.

3. 4.5 per cent had unusual pain, but still suggestive enough of angina to make myocardial infarction the admitting diagnosis in all but one case.

4. 3.5 per cent of the records contained no mention of pain at the time of infarct, but in all of these instances the failure to elicit a history of pain could be easily accounted for by an associated pathological condition which either elevated the patient's pain threshold or rendered him incapable of manifesting the pain had it existed, or both.

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THE PHARMACO-DYNAMIC TREATMENT OF PSYCHONEUROSES BY USE OF CARBON DIOXIDE INHALATIONS

Preliminary Report

C. W. BAARS, M.D.
Minneapolis, Minnesota

IN 1929, Loevenhart et al reported increases in psychic function in various psychotic patients, associated with inhalations of mixtures of carbon dioxide in oxygen. L. J. Meduna of the Illinois Neuropsychiatric Institute at Chicago applied this procedure, though with modified technique, to psychoneurotic and psychosomatic problems.

Meduna conceives of psychoses as disturbances of cortical functions, i.e., of the higher associative functions. The psychoneuroses he considers as disturbances of lower structures of the brain which upset or distort the emotional values of ideas and concepts. He feels that the basic difference between a psychoneurotic and a normal person lies in a "disproportion between excitement and excitability." Because of this disproportion the afflicted individual will develop a low threshold to subnormal stimulation or an unduly strong reaction to normal stimulation.

Anesthesia may be induced through repeated inhalations of carbon dioxide. When given in a mixture of 30 per cent carbon dioxide and 70 per cent oxygen, the former goes into a simple solution in the plasma, while the oxygen, having passed the capillary barrier immediately, gets in a chemical linkage with the hemoglobin. By blocking the utilization of oxygen the carbon dioxide produces a rapidly reversible acidosis (Gibbs et al). The threshold of stimulation of every single nerve cell is increased by the carbon dioxide in direct proportion to the logarithm of the concentration of the carbon dioxide inside and outside the cell membrane. Windle et al showed that the carbon dioxide produces certain unexplained changes in the brain cells which make them stain darker than normal.

Equipment.—The mixture of 30 per cent carbon dioxide and 70 per cent oxygen—obtained in tanks, ready mixed—reaches the patient via a reducing valve and an inhalation mask with a central inhaling-exhaling valve. The reducing valve is equipped with two pressure gauges, one showing the pressure inside of the tank, the other indicating the pressure—in pounds per square inch—actually conveyed to the patient. It is important that the valve between mask and bag is an inhaling-exhaling one, as it prevents the patient from rebreathing into the bag.

Procedure.—During the treatment the patient lies on a bed or treatment table. The assistance of a nurse is not essential. The number of respirations taken by the patient is counted out in a loud tone in order that the patient can hear and remember the last count and so indicate at the end of the treatment the onset of the full anesthesia. At the first treatment it is advisable to give only 20 to 25 respirations. Onset of anesthesia is usually reached after from 10 to 15 respirations, but if consciousness is not lost at the end of the treatment, the number of respirations may be gradually increased during the following sessions.

Depending on the depth of the anesthesia, restoration of consciousness after removal of the mask takes approximately one or two minutes. There are no after-effects to interfere with the patient's immediate dismissal from hospital or office other than a momentary dizziness and occasional "numbness" of the legs.

Preparation of the Patient.—A thorough physical examination should be made with special attention to the respiratory and cardiovascular systems, as active pulmonary tuberculosis, hypertension and organic heart disease are contraindications to this treatment.

Restriction of meals is unnecessary as nausea or vomiting do not occur. Clothing does not have to be removed as there is little or no danger of incontinence. There is no danger of tongue biting, fractures or dislocations.

The patient is given a simple explanation of the nature of his "nervous" trouble and of the nature of the treatment itself. A timid or fearful patient may need reassurance as to the safety of

From the Division of Psychiatry, Minneapolis General Hospital, and University of Minnesota Medical School.

the treatment. He is advised to breathe slowly and deeply. In case of panting or rapid breathing, the mask should be removed and the patient instructed again as to the proper respirations. The patient is instructed that he may experience certain dreams, emotions, thoughts or memories or only a dreamless sleep, and he is encouraged to tell all he remembers upon awakening.

In the reported cases every effort was made to avoid any suggestions that might interfere with the objective evaluation of the procedure. For instance, the usual question, "Will this treatment help me, doctor?" was answered with the statement that it was only an experiment and that the result might or might not be gratifying.

Physiological Reactions.—with increasing respirations one distinguishes a definite pattern of reactions in the order mentioned:

1. Subcortical excitation, with increase in respiratory rate, heart rate and blood pressure. Pupils and facial capillaries dilate and perspiration appears. This phase lasts from 6 to 12 respirations.

2. Cortical inhibition (narcosis).

3. Psychomotor and psychosensory excitation, mainly composed of emotional discharges and depending on the patient's personality characteristics.

4. Symptoms of extrapyramidal stimulation, usually appearing around or beyond the thirtieth respiration. Frequently seen are tremors, tetanoid spasms of the hands and fingers, athetoid movements and sometimes Babinsky signs.

5. Signs of decerebrate rigidity. This phase may be reached after 60 to 90 or more respirations and is not observed in ordinary therapeutic sessions.

Number and Duration of Treatments.—Treatments may be given as often as once daily, depending on time available and the need of the patient. Each treatment takes about five or six minutes, including interpersonal orientation before and after administration of the gas.

Improvement may be observed after as few as twenty or as many as 150 treatments. If none is seen after about twenty-five treatments, there is usually little hope of improving the clinical picture by further treatments. The number of respirations during each session will be determined by the degree of response. If no subjective change is reported by the patient, the number of respirations is increased by five for three or four treatments. This may be repeated several times if necessary. The adequate degree of saturation with carbon dioxide can be established usually in about ten to fifteen treatments.

Mode of Action.—Usually four patterns of response may be distinguished:

1. Gradual diminution and disappearance of symptoms without much observable mental reaction.

2. Direct abreaction, with reliving of the pathogenic experiences and discharge of the general and focal tension symptoms.

3. Indirect abreaction, by recalling of a dream with symbolic meaning and which can be analyzed.

4. Spontaneous analysis of forgotten or repressed material, recollected between dreams. Without emotional discharge during the treatments and without dreams, the patient discovers the causal relation of his pathogenic experiences to the actual symptoms.

Indications.—Though the treatment reportedly is ineffective in the obsessive-compulsive neuroses, and gives only transient relief of some psychotic features, good results may be expected in the presence of various psychoneurotic symptoms, expressing either focal tension (spastic colitis, stammering, et cetera) or general tension (anxiety, irritability, et cetera).

Meduna also reports satisfactory results in passive homosexuality and alcoholism.

This treatment was given to twelve patients in the Out-Patient Department of Minneapolis General Hospital. For practical reasons the treatments were limited to three times a week (except Case 4). Five patients refused further treatments after from one to five sessions. Four of them gave as reason that they felt like dying or had other frightening experiences. One gave no reason at all. Two other patients received the treatments at very irregular intervals and showed little or no improvement.

Five patients showed different degrees of improvement.

Case Reports

Case 1.—A twenty-seven-year-old, white, single woman, since January, 1949, had experienced fear, tension, dizzy spells and hostility towards her mother. Clinical impression corresponded with the Rorschach test done in

March, 1949, which indicated a fairly severe anxiety neurosis with some overlay of depression. She received six EST in May, 1949, and showed some improvement. In October, 1949, the symptoms of anxiety returned. She then received a total of forty-six treatments of carbon dioxide inhalations. Anesthesia was usually induced after from 6 to 10 respirations. She usually experienced the same dream in which she saw a big city with many people and much commotion. She began to show subjective improvement with the thirteenth treatment. Her symptoms disappeared gradually during the subsequent weeks. However, at about the thirtieth treatment she felt like slipping back into her previous state. The total number of respirations then was increased to 50, and she again improved rapidly. The Rorschach and Thematic Apperception tests were repeated at the end of the treatments and indicated that she was much less concerned over her unhappiness in the past while her problems did not seem quite as important to her as before. In a letter she wrote me afterwards, she stated: ". . . I feel that the treatments have helped me a lot; I feel more like a person that belongs in this world just like anyone else, but there are still things I don't understand."

Case 2.—A twenty-nine-year-old, single, Mexican woman suffered from phobias, crying spells, guilt-feelings, dizziness, tachycardia, insomnia, et cetera, of at least six months' duration. The clinical impression was that she was suffering from an anxiety neurosis with hysterical features. The Rorschach test indicated adjustment on a rather immature egocentric level, lack of poise and inner security, tendency to be rigid in her thinking, being more of an introvert than an extrovert. She received a total of forty-five treatments. Anesthesia was usually reached between 10 to 20 respirations. Perhaps because of her restricted command of the English language she was never able to tell the contents of her dreams. She began to show definite improvement following the nineteenth treatment, and had no complaints between the twenty-fifth and thirtieth treatments. From there on there was a gradual return of some of her neurotic symptoms, which, however, disappeared again when the number of respirations was stepped up to 50. A repeat Rorschach test at the termination of the treatments still suggested anxiety and hysteria, but she appeared to have more tact in dealing with others, she was more logical in approaching her problems, and she was more extroverted than formerly. Clinically she appeared much improved, her shyness had disappeared, she would look at people when talking to them, she seemed to have more poise and confidence, and her symptoms of anxiety were much less prominent.

Case 3.—A twenty-five-year-old, white, single man had numerous neurotic complaints most of his life. Our clinical impression was anxiety neurosis with early schizoid features. The Rorschach test indicated immaturity with very poor inner control, introspectiveness, anxiety, conflict, tension and marked emotional instability; conclusion: severe maladjustment with prominent signs of hysteria and anxiety. He received a total of twenty-six treatments. Anesthesia was reached only on a very few occasions, in spite of the fact that his respirations were always deep and slow and at times numbered as many as 55. He usually saw colored lights evolving in complicated geometric patterns. Notwithstanding the unexplained absence of anesthesia, the repeat Rorschach test indicated considerable change—the immaturity was much less prominent, he appeared to have much better intellectual control, he was less overly sensitive, he tended to hold back his emotions more without, however, being too rigid. He also seemed to have developed insight into his condition.

Case 4.—A twenty-five-year-old, white, single man was admitted to the hospital with a severe acute anxiety hysteria. Personality study revealed prominent schizoid features. There was a history of epilepsy since childhood. He showed marked improvement with two treatments daily for the first three days and a total of nine treatments within one week. He was readmitted to the hospital several weeks later presenting clinical features of a schizophrenic psychosis, but without symptoms of hysteria or anxiety.

Case 5.—A thirty-four-year-old, white, married man was diagnosed as a depressive reaction in a passive aggressive person with schizoid trends. Due to circumstances the number of treatments had to be limited to twelve. By then he indicated that his depressive features had diminished; he felt more relaxed. He was most impressed with the fact that he had not experienced any craving for alcohol, though he had been a heavy drinker for at least seventeen years. He felt that the treatments were responsible for this.

Judging by the results of these few cases, I feel that the treatment of psychoneuroses by use of inhalations of carbon dioxide deserves a wider experimental trial. It appears that though this treatment may not be able to cure the neuroses, at least it will diminish the morbid emotional response to environmental or other stimuli and favorably influence pathologic reaction patterns, so that additional psychotherapy will be easier and more successful. As this treatment is inexpensive, consumes very little time on the part of the patient as well as on the part of the physician, and is free from any danger, it may be considered as a valuable addition to our therapeutic armamentarium.

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TORSION OF THE PEDICLE OF OVARIAN CYSTS

DOUGLAS L. JOHNSON, M.D.
Little Falls, Minnesota

TWISTED ovarian cyst pedicle is a condition which is historically quite common. However, the average practitioner encounters it but a few times during a lifetime of practice.

Testbooks state that torsion is the most important complication of ovarian tumors and that it occurs in 10 to 20 per cent of the cases. Although percentage-wise these figures may be correct, the fact that only five cases were found in the past ten-year period in St. Gabriel's Hospital, a 100-bed general hospital, indicates that its occurence is infrequent. During this same period, the number of major surgical operations of all types was 3,146. Thus, torsion of the pedicle of an ovarian cyst has occurred about every two years in a hospital that averages one major surgical operation daily.

The cause of twisting of the pedicle of an ovarian tumor is not often determined. Since it is a mechanical process, however, there are several mechanical factors involved. First of all the tumor or cyst must be freely movable in order to twist. Typically, this would involve dermoid cysts, fibromas and cystomas. Those tumors which are usually adherent, and therefore not involving a torsion process, are corpus luteum cysts and endometrial or chocolate cysts. Also, an extremely large mass would not be prone to twist, although the cyst may vary from golf ball size to 8 or 10 inches in diameter.

According to some writers, this complication is said to follow some unusual exertion, severe trauma, or a pregnancy that results in increased length of the pedicle. This last factor seems to be recognized as a definite causative agent by several authors.

The symptom complex of twisting of the pedicle of an ovarian cyst, reduced to its simplest terms, consists of an abdominal pain followed by a slowly developing peritonitis. There are of course many variations, depending on the stage of the condition that has been reached.

There is frequently a history of recurrent abdominal pain extending over a period of several weeks or months. These attacks, which are not persistent, are interpreted as slight torsions that correct themselves. In a series of 120 cases reported in England, 119 gave a history of pain previous to the severe attack.

The patient who appears for treatment usually complains of an abdominal pain that may or may not have had a sudden onset. There usually is nausea and vomiting. Usually, if seen early, there will be little or no temperature elevation or leukocytosis. Examination of the abdomen usually reveals a pelvic mass, although bimanual examination may be necessary to reveal it. There is usually acute tenderness over the mass itself, and often over the entire lower abdomen. As the disease progresses, abdominal rigidity, elevated temperature and increased white blood cell count develop.

The symptomatology also varies according to the speed with which torsion occurs, and also with the amount of twisting. The degree of rotation may vary from a few degrees to more than 360 degrees. In one of the cases to be reported later it will be noted that the tumor had rotated fully three complete turns.

The sudden rotation produces an unbearable pain accompanied by other prostrating symptoms and severe shock. The more slowly developing attack may have recurrent pain over a period of a few days, gradually becoming more severe. The severity of the symptoms also increases with the amount of torsion. Usually in an acute rotation there will be some uterine bleeding.

In considering the differential diagnosis, appendicitis looms as the chief possibility. The absence of a mass is probably the chief means of differentiation. Also to be considered are ruptured tubal pregnancy, ruptured ovarian cyst, ureteral stone and strangulated hernia. In each case, careful examination will probably eliminate these other conditions. However, in some cases the diagnosis may not be made until the abdomen is opened.

The pathological effect of the twisting process depends upon the amount of vascular changes created. Partial vascular occlusion with gradual torsion may cause only venous congestion. As the process continues and thrombosis of the

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veins occurs, the same effects are produced as in a more rapid process. Reaching the advanced stages, this produces gangrene of the ovary, the cyst and usually the tube. The mass appears dark purple or black. Peritoneal irritation may be evident. The thrombosis may extend proximally up along the ovarian pedicle with a predisposition toward postoperative embolism. The treatment of such a pathological process is surgical as soon as the diagnosis can be established. If the diagnosis cannot be immediately made, a period of observation does not significantly increase the risk to the patient. This period will often permit the observer to see the picture develop over a period of a few hours to the point where the diagnosis is definite.

Removal of the cyst usually means the removal of the ovary and tube, since they are usually both involved in the twisting process. The technique of removal consists of double clamping and ligating with peritonealization of the exposed surfaces. Results of surgery are usually excellent, although the operative risk is increased over that of removal of a simple cyst or tumor.

There is some variation of opinion as to whether or not the pedicle should be untwisted before removal. One English surgeon untwists the pedicle and hot packs the cyst. If normal color returns to the ovary and tube, he preserves these structures. A French surgeon untwists the pedicle only when necessary for exteriorization. He maintains that ligation and cutting without untwisting will result in a lower rate of postoperative emboli.

The five following cases illustrate the diagnostic points and some of the errors that may be made in diagnosis.

Case Reports

Case 1.—This twenty-eight-year-old patient was admitted to the hospital November 9, complaining of pain in the lower left abdomen, vomiting, and anorexia. She stated that she had been well until four days prior to admittance, when she was seized with severe abdominal pain, which persisted for two days, but occasionally disappeared entirely. Severe pain returned during sleep the night before admittance. Improvement occurred during the afternoon of the day of admittance. Recurrence of the pain brought her to the hospital during the evening.

The past history revealed that she had had four normal pregnancies. Her youngest child was fourteen months old. An appendectomy had been performed seventeen years previously. Menstrual periods were normal. An episode similar to the present one but milder and lasting three days had occurrd six months previously.

Examination revealed a moderately obese woman, appearing uncomfortable, lying with the legs drawn up, pulse 120, and blood pressure 140/80. A lower abdominal mass was present in the mid-line extending up to the umbilicus or about the size of a six months' pregnancy. It was freely movable and tender. There was also tenderness in the left lower quadrant. Pelvic examination revealed an acute tender mass the size of a five months' pregnancy, somewhat fluctuant, lying mainly to the left of the mid-line.

Diagnostic possibilities considered on admission were: (1) pregnancy with threatened miscarriage, (2) bowel obstruction, (3) left ovarian cyst with torsion of the pedicle.

The white cell count on admittance was 15,500. X-ray examination showed a soft tissue mass probably an ovarian tumor. The temperature was normal on admittance, 99 degrees the following morning, and by that evening had risen to 101.4 degrees. At this time the abdomen was more tender and muscle spasm was appearing. She was taken to the operating room with the diagnosis of ovarian cyst with torsion of the pedicle. It will be noted that this patient presented the typical picture of a pelvic mass and a slowly developing peritonitis.

A large ovarian cyst involving the entire left ovary was found. The pedicle had twisted through an entire 360 degree circle three times. After removal, the tumor measured 5 by 9 inches and weighed 4 pounds and 13 ounces. The walls were thickened by hemorrhage. The postoperative course was uneventful.

Case 2.—This thirty-one-year-old patient was admitted to the hospital January 7, complaining of lower abdominal pain recurring intermittently for a week. On the day of admittance, she had severe abdominal pain starting in the right side with a sudden onset. There was a pregnancy of two months' duration existing.

The patient had pain and tenderness over McBurney's point and right rectus rigidity was elicited. Pelvic examination was not done. Temperature on admission was 100 degrees, white cell count 19,600. Preoperative diagnosis of acute appendicitis or possibly ectopic pregnancy was made.

The patient went to the operating room immediately. The appendix appeared to be normal. Examination of the pelvis revealed a mass of gangrenous tissue in the region of the right tube with a retro-uterine mass about 3 or 4 inches in diameter lying deep in the pelvis. The pedicle was twisted 720 degrees. The tube and ovary were removed with the cyst.

The patient recovered uneventfully and was delivered normally at full term. Pelvic examination might have established the diagnosis preoperatively insofar as the mass was not palpable abdominally.

Case 3.—This patient, forty-six years of age, was admitted to the hospital November 4, having had severe pain in the right lower quadrant of six hours' duration, with nausea, vomiting and a feeling of faintness. There was no history of previous pain. The patient appeared

pale and sick and was in great pain. Pulse was 90, blood pressure 102/80.

Examination of the abdomen revealed tenderness deep in the right lower quadrant with some rebound tenderness. White blood cell count was 11,400.

Diagnosis of ovarian cyst with possible torsion was made. The patient was taken to the operating room immediately and a large hemorrhagic cyst was removed. It was filled with blood and was becoming gangrenous. The cyst had twisted one and one-half times on its pedicle. Recovery was complete and uneventful. This patient presented the shock picture of rapid torsion.

Case 4.—This thirty-year-old patient was admitted to the hospital February 21, 1945, with a history of pain in the right lower quadrant starting ten days prior to admittance. This pain had a sudden onset and required repeated use of opiates for relief. The pain had been more or less constant for ten days but was not as severe as when she was admitted. The last menstrual period was January 16. Two days prior to admittance she had severe rectal pain during defecation. On admittance the temperature was 100 degrees, pulse 94. Pelvic examination revealed a hard, tender mass in the left lower quadrant. The uterus was firm and extremely painful to touch. The Friedman test was strongly positive. The white blood cell count was 10,000. A preoperative diagnosis of possible ectopic pregnancy or ovarian cyst was made.

The patient was taken to the operating room, and a large hemorrhagic mass involving the right tube and ovary was found in the cul-de-sac on the right. There were numerous adhesions. The gangrenous mass was not identifiable. However, the opinion of the pathologist was that there was no placental tissue in the mass, and that the diagnosis was a twisted ovarian cyst.

The postoperative course was uneventful. The patient was delivered of a full term infant the following October.

Case 5.—This patient, aged forty-one, was admitted to the hospital on January 9, 1950. She was delivered of a 4-pound, 3-ounce infant spontaneously at 7:00 a.m. on January 10. Twenty-four hours postpartum she developed a distended upper abdomen with repeated emesis of black material. Her pulse rate increased to 160, blood pressure fell to 105/60, white blood cell count 13,000. She had marked sweating, pallor, gray facies, anxious expression and appeared to be in pain. The patient had a temperature of 102 degrees. Pain had a sudden onset.

Diagnosis of bowel obstruction was made, and the possibility of some existing peritonitis was considered. The condition was thought not to be purely a complication of her delivery. Twenty-four hours later, after decompression of the bowel, the patient's general condition seemed to be improved. The white blood cell count dropped in twenty-four hours from 13,000 to 8,600. It was determined, however, that operative interference was necessary to relieve the intestinal obstruction.

At operation a large ovarian cyst with a twisted pedicle was found on the right side. Adhesions from this mass obstructed the ileum about 6 inches from the ileocecal valve. The cyst contained bloody fluid. The right tube was included in the mass that was removed. Recovery was uneventful.

Summary

Five cases have been presented to illustrate the point that in a woman lower abdominal pain with gradually increasing peritonitis and a pelvic mass probably indicate torsion of the pedicle of an ovarian cyst.

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NURSING NEEDS INCREASE

Nursing needs have increased in spite of lower death rates, longer life expectancies, and a generally healthier population. The number of people in the United States has increased by an estimated 16,000,000 since the 1940 census. More people are now living to an older age than ever before, and consequently the diseases and disabilities of older people have multiplied. A high standard of living has prevailed since the early years of the war, medical prepayment plans have spread, and public health services have been expanded in many areas. In 1940, 10,087,000 patients were admitted to hospitals in the United States, but by 1948 the number of hospital admissions had risen to 16,422,000.—Pub. Health Reports, August 5, 1949.

LOW-BACK AND SCIATIC PAIN
The Importance of Intraspinal Investigation

HENDRIK J. SVIEN, M.D., and HENRY W. DODGE, JR., M.D.
Rochester, Minnesota

THE RÔLE of protruded lumbar intervertebral disk in the production of low-back and sciatic pain has been emphasized frequently in the literature of the past few years. However, it is well to be reminded periodically that there are numerous causes of low-back and sciatic pain. These can be classified, in general, as follows:

1. Infectious causes: syphilis, typhoid and tuberculous spondylitis, fibrositis, myositis, certain forms of arthritis, herpes zoster, and so forth.

2. Metabolic causes: diabetes, gout, osteoporosis, and so forth.

3. Structural or skeletal causes: congenital deformities such as spina bifida, sacralization of lumbar vertebrae, spondylolisthesis, spondylolysis and similar lesions, hypertrophic changes, and traumatic skeletal lesions.

4. "Peripheral" causes: pelvic tumors, lesions of the hip joint and femur, vascular disorders, and so forth.

5. Diseases of the spinal cord: sclerosis, myelitis.

6. Intraspinal tumors: primary tumors of vertebrae, primary tumors of the spinal cord and its envelopes, and metastatic tumors.

7. Protruded lumbar intervertebral disks.

By means of a carefully elicited history, a thorough physical neurologic and orthopedic examination, and pertinent roentgen-ray survey and laboratory tests, one can generally relegate the case of low-back and sciatic pain under consideration to its proper category. If infectious and metabolic disorders can be ruled out, if skeletal and peripheral causes can be shown to be absent, and if neurologic evidence of disease or tumor of the spinal cord is not present, one logically places the lesion under investigation in the category of protruded lumbar intervertebral disk.

If the patient is suspected of having an "atypical" protruded disk, he will usually be subjected, in addition to the routine study, to further investigation, which will consist of intraspinal studies. These will include spinal puncture with manometric studies, analysis of the spinal fluid and contrast myelography with either air or oil. If oil (pantapaque or lipiodol) is used, the spinal subarachnoid space is examined as high up as the level of the seventh or eighth thoracic vertebra. By these means, the presence or absence of protruded disk can be determined with a high degree of accuracy.

However, if the patient is considered to present the classic or typical syndrome of protruded lumbar intervertebral disk, he may be operated on directly, without intraspinal investigation. Herein lies a serious pitfall concerning which words of warning can justifiably be said. It is not an unusual experience to see a patient who initially presented a "typical" syndrome of protruded disk and who was operated on directly without relief of his pain, but who, on subsequent intraspinal investigation and operation, was found to have a tumor of the spinal cord.

In a recent review of 1,296 consecutive cases of intraspinal operation from the level of the tenth thoracic vertebra down, it was noted that 1,242 operations were carried out for removal of protruded disks, fifty-one operations were done for removal of spinal cord tumors, and in three cases localized arachnoiditis was found. Due to the disparity in length between the spinal cord and the skeletal axis, some of the nerves which comprise the sciatic nerve leave the spinal cord as high as the level of the tenth or eleventh thoracic vertebra. Involvement of these nerves in the spinal canal anywhere between their point of origin and their exit through their respective intervertebral foramina may give rise to low-back and sciatic pain.

Of the fifty-one tumors of the spinal cord in this series, twenty-four were evident on the initial examination. However, in the remaining twenty-seven instances, the working diagnosis, after the initial history and the general, neurologic, orthopedic and roentgen-ray examinations, was "protruded lumbar intervertebral disk suspect." In all twenty-seven instances, neurologic findings were minimal or absent and roentgenologic sur-

Dr. Svien is in The Section on Neurologic Surgery, Mayo Clinic, and Dr. Dodge is a Fellow in Neurosurgery, Mayo Foundation, Rochester, Minnesota.

vey showed only a narrowed interspace, slight scoliosis or hypertrophic changes in some cases. Fifteen of the twenty-seven tumors were situated above the level of the fourth lumbar interspace and would have been missed if only direct exploration of the fourth and fifth lumbar interspaces had been carried out. Also, it is likely that many of the remaining twelve tumors which were situated at or below the level of the fourth lumbar interspace would have been missed if only direct exploration of the fourth and fifth lumbar interspaces were carried out, inasmuch as many of these tumors were intradural and presented no extradural manifestation. Furthermore, many of these tumors which masqueraded as protruded disks were of the type which, if removed early before irreparable damage to the spinal cord and cauda equina had taken place, could be removed completely without neurologic residua.

We have so frequently been impressed with the importance of intraspinal investigation that we employ it in every case in which a protruded disk is suspected, no matter how classic is the case. It is only in this way that spinal cord tumors which mimic faithfully the syndrome of the protruded disk can be identified for what they are. Because tumors situated as high as the level of the tenth thoracic vertebra can produce signs and symptoms indistinguishable from those of the so-called typical protruded lumbar intervertebral disk, it is necessary to examine the spinal subarachnoid space, at the time of myelography, up to the level of the eighth or ninth thoracic vertebra.

SIGNIFICANCE AND MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX

(Continued from Page 34)

feet the volume of air in a given space will double. This may be sufficient to produce severe respiratory embarrassment in an individual carrying a degree of pneumothorax or air in emphysematous bullae which is not disabling at sea level. One of our patients, an Army Reserve fighter pilot, developed a pneumothorax which he carried for several days without seeking benefit of medical advice. On the third day, while waiting in the ready room at the air field preparatory to taking up a single seater fighter plane, he fortunately collapsed and was taken to the hospital where x-rays revealed an extensive pneumothorax. Had the pilot been able to hold out long enough to get his plane to 8,000 or 10,000 feet he would very likely have been the victim of an unexplained plane crash.

In the differential diagnosis the lesion most easily confused with spontaneous pneumothorax is a giant bullous emphysema. These lesions produce the so-called vanishing lung and are seen both in infants and adults. Usually careful examination of the x-ray will reveal other cystic areas as well as a ring of compressed atelectatic lung about the giant bullae. It is important to make the proper diagnosis since aspiration of these giant bullae is indicated only as a life-saving procedure. When the blebs are aspirated and the needle removed, the puncture wound of the bleb will invariably leak air into the pleural space causing a tension pneumothorax.

An example of a giant bullous emphysema from the service of Dr. T. J. Kinsella is shown in Figures 9 and 10 (Case 6).

The author wishes to express his appreciation to Dr. T. J. Kinsella for permission to use Cases 4 and 6 from his St. Mary's Hospital Service.

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History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

NORA H. GUTHREY
Rochester, Minnesota

(Continued from the December Issue)

Arthur Foote Kilbourne (1858-1934) was from 1889 until his death medical superintendent and administrator of the Second Minnesota Hospital for Insane (Rochester State Hospital), an honored citizen of Olmsted County and the state.

Descended from colonists who settled at Weatherford, Connecticut, in 1636, Arthur Foote Kilbourne was born at Keokuk, Iowa, on January 5, 1858, the son of Edward Kilbourne and Caroline Amelia Foote Kilbourne, both of whom were natives of Connecticut. The other children of the family were three sisters, Louise B. Kilbourne, Carrie Kilbourne (Kellogg), and Mary Kilbourne (Lyon), and two brothers, Henry W. and Alfred L. Kilbourne.

After receiving his preliminary education in the public schools of Keokuk and reading medicine with Dr. MacDonald, of Keokuk, Arthur F. Kilbourne went east in 1880 to matriculate in the medical department of the University of the City of New York. He was graduated in 1883 with the degree of doctor of medicine and entered at once on a service of nearly two years as an assistant physician at the New York City Hospital for Insane, under Dr. A. E. MacDonald, "the czar of Ward's Island." Late in 1884 he came to St. Peter, Minnesota, as second assistant physician at the Minnesota Hospital for Insane.

During his four years in St. Peter Dr. Kilbourne was an able member of the hospital staff and a member and once an officer of the Nicollet County Medical Society. He was married in St. Peter on October 9, 1888, to Miss Ella Donahower, daughter of Mr. and Mrs. F. A. Donahower of that city.

When, in 1889, an investigation was made of the administration of the Second Minnesota Hospital for Insane at Rochester, changes in staff were made and Dr. Kilbourne, on June 6, was appointed acting superintendent of the hospital. Early in November, on the resignation of Dr. J. E. Bowers *(q.v.)*, Dr. Kilbourne became superintendent; he was the second superintendent of the institution, the seventh appointee to the medical staff.

Able, ethical, progressive, loyal to his profession and unfailingly kind to and in sympathy with patients and associates, for forty-five years, until his death, he worked to bring the hospital, well begun in 1879, to its splendid development. His constant effort was toward the benefit of the patients, in scientific treatment and in comfortable and beautiful surroundings. Even his favorite personal hobby, the raising of superior flocks of purebred White Leghorn poultry, was made part of the common good. In 1889 he sponsored at the hospital a training school for attendants and a training school for nurses, the latter of which long functioned successfully under the management of Dr. R. McE. Phelps, Assistant Superintendent. Dr. Kilbourne was one of the first psychiatrists and hospital executives,

in the nineties, to maintain that existing methods of committing patients to state institutions for the insane fostered the unfortunate idea that insanity was a disgrace, and to work for improvement; he always insisted on the use of the word *hospital* instead of *asylum*.

Dr. Kilbourne was licensed in Minnesota under the medical practice act of 1883, receiving certificate No. 1468 (R) on June 22, 1887. He was a member of the Olmsted County Medical Society, and affiliated groups, for forty-five years, and at the time of his death of leading local, state and national medical associations, among them the Southern Minnesota Medical Association (a founder, 1892; its second president, 1893-1894), the Minnesota State Medical Association, the American Medical Association, and the American Psychiatric Association (a life member; its president, 1908-1909); this last society was from 1844 to 1892 the Association of Medical Superintendents of American Institutions for the Insane, and from 1892 until the second change of name, the Medico-Psychological Association.

Interested in social and civic affairs, Dr. Kilbourne was active in Masonic circles, was a Knights Templar, and a member of the Rotary Club. For twenty-five years he served on the Rochester Library Board and as senior warden of the Calvary Episcopal Church of the city.

When Dr. Arthur Foote Kilbourne died at his home on November 30, 1934, in his seventy-seventh year, after a considerable period of failing health, he had given fifty years of distinguished service to the state. High tribute was paid him from many sources as gentleman, scientist and executive. Perhaps the most discerning was the comment, "His outstanding trait was his unfailing kindness and tolerance; he always saw the other person's side of any question."

Dr. Kilbourne was survived by his wife, a daughter and a son. Arthur Donahower Kilbourne died on February 14, 1939, at his mother's home in Evanston, Illinois. In 1942 Mrs. Kilbourne, with her daughter, Miss Katherine Kilbourne, returned to Rochester. Mrs. Kilbourne died in Rochester early in 1947.

Horace F. Kilgore, a homeopathic practitioner, born in 1835, was in Pleasant Grove, Olmsted County, in 1873, according to the *History of Homeopathy* (1880). Other reference to his residence and his activities in the county has not been noted by the writer, and it is believed that his stay was short. On December 31, 1883, when he probably had been resident in Luverne, Rock County, for a considerable time, he received exemption certificate No. 702-3 (H), under the medical practice act of that year. There is record also that prior to 1890 Mrs. H. F. Kilgore, of Luverne, filed an affidavit with the Minnesota State Medical Examining Board that she had been engaged in the practice of medicine in Minnesota before July 1, 1887. The name of Dr. Horace F. Kilgore appeared in the first edition of the directory of the American Medical Association, in 1906; information as to graduation from a medical school had not been available.

Axel N. Knudson, or **Knutson (1826-1899),** born in Ofoten, Norway, came with his wife from Norway to southern Minnesota in 1871 and settled first on a farm three miles from Albert Lea. His professional qualifications are not known; notes about him are included here because he was one of a numerous class of practitioners common in the region in those early years.

Left with an infant daughter at the death of his wife in 1873, he presently remarried. When this marriage ended after twelve years, he began to drift from town to town, and during the next fourteen years he lived in Deborah, Iowa;

in Spring Grove, Houston County, Minnesota; in Mabel, Fillmore County; and in Rock Dell and Rochester, Olmsted County. He sought always his fellow Norwegians, carrying with him his medical equipment in three small chests, and giving "Russian steam baths, cupping, bleeding and medical treatment."

This practitioner spent his last two years as a lodger at the home of Mr. and Mrs. Nels Young, of Rochester, in rooms over the harness shop of Campion and Marrens on Third Street. His death occurred as the result of a fall from the sloping roof of a high shed onto which his room opened. The Rochester press described Dr. Knudson as a recluse who long had led a pathetically lonely life, a deeply religious man and an honest exponent of healing as he knew it. The funeral services were held at the Zion Church, Rock Dell, with burial near by. Halvor Oleson of Rock Dell had been his friend and confidant. It was discovered after Dr. Knudson's death that his only daughter, Mrs. Fred Webber, was living in Austin, Minnesota; she had not heard from her father for twelve years.

Sarah (Mrs. F.) Koontz, who was known in her locality as a "magnetic healer," was born about 1835 and in 1876 or a little earlier she came to Oronoco Township, Olmsted County, from Elkhart, Indiana, with her husband, who was a farmer, and two children, Curtis and Alice. The family home was about three miles south of Oronoco, near Stone's Corners. When he was a young man, Curtis Koontz returned to Elkhart, where he became a railway employe. Alice, who was born in Elkhart in 1861, was married in 1882 to Albert W. Clason, of Oronoco Township, and in the community of her early home spent the remainder of her life. She died on November 14, 1899, under chloroform anesthesia, in a dentist's chair in Rochester. She was survived by her husband, four children, and her brother. Mr. and Mrs. Koontz had died some years earlier.

Mrs. Sarah Koontz on December 31, 1883, under the medical practice act of that year, received state exemption certificate No. 703-3 on giving proof of at least five years' practice of healing in Minnesota.

A reminiscent account has come from an elderly man who was a small boy in Oronoco Township in the eighteen seventies. The Koontz family were good citizens. Many residents within a wide radius had faith in Mrs. Koontz' ability as a healer. "She had a wonderful practice, people really thought that she did a lot of good," and they went to her for relief from various ailments. She would never set a price for her treatments (could not, legally?), but after a patient had consulted her two or three times, perhaps for a cold, she would accept a few dollars. Her procedure of healing was to go into a trance, apparently induced by her stroking her brow with her fingertips, using her arms in rhythmic gestures, snapping her fingers on the completion of each stroke as though casting something from her, and talking always in rhyme. When the trance was established, she would approach the patient, make gestures of stroking the patient's forehead although as a rule not actually touching it, and snapping her fingers. If the sufferer had rheumatism, and many persons in that period did have it, she occasionally would touch lightly the aching region. The afore-mentioned small boy of the seventies was taken to her by his mother over his bitter protest that he did not want to go to "that old fool." He was overwhelmed by consternation when Mrs. Koontz said, during the treatment, "You call me a fool, and I will wind you on a spool and send you to school."

Nathaniel S. Lane (1851-1921) was from 1882 to 1909 a physician of Minnesota; in Eyota, Olmsted County, from 1882 into 1888; in North St. Paul from 1888 into 1894; in Winona from 1894 into 1909.

Born at Paterson, New Jersey, on August 1, 1851, Nathaniel S. Lane was the son of an English father, who was an actor, and a French mother, whose surname was Freeman. He had a sister and a brother, John. After the death of his mother, in her thirties, the boy was abandoned by his father in New York City and became a ward of an orphan asylum. Bound out to a farmer in McHenry County, Illinois, he not long afterward ran away to Chicago and there, with courage and persistence that can only be imagined, he obtained an excellent academic education. All his life he was a worker for improved methods of education, perhaps, his daughter has said, because he had seen so much suffering from lack of education. There is evidence that he first came to Eyota in the middle eighteen seventies, for there is recollection that he read medicine in the village with Dr. A. W. Stinchfield, who settled in Eyota in 1873; probably in this period the young man met the Olmsted County girl he was to marry in 1878.

In 1877 Nathaniel S. Lane received his degree of doctor of medicine from the Chicago Medical College (the Medical Department of Northwestern University) and in the same year began medical practice in Stanton, Nebraska. On October 10, 1878, he was married at Rochester, Minnesota, to Emma Virginia Fulkerson, a daughter of the Reverend J. W. Fulkerson of Willow Brook Farm, near Predmore Village, in the region of Marion and Simpson. Mr. Fulkerson had been sent as a missionary to southern Minnesota in 1856 by the Board of Missions of the United Brethren Church; he was for many years an honored citizen of Olmsted County, as today (1947) his descendants are respected residents of Rochester.

In 1882 Dr. and Mrs. Lane returned from Nebraska to settle in Eyota, Minnesota, where the doctor operated a drug store and followed his profession, during the greater part of his residence of six years in partnership with Dr. Stinchfield. By 1887 he had acquired interests in North St. Paul, notably a drug store in partnership with Howard E. Barto, also of Eyota, and after taking a postgraduate medical course in New York City early in 1888, he removed to North St. Paul in April of that year to enter practice with Dr. Edgar A. Holmes. Dr. Holmes, as noted earlier, had been a boy in Eyota and, like Dr. Lane, had studied medicine with Dr. Stinchfield; he removed to St. Paul in April, 1888, from Oronoco.

After six successful years in North St. Paul Dr. Lane returned to southeastern Minnesota, to Winona; there in November, 1901, he joined a clinical group as a specialist in diseases of the ear, nose and throat, and remained until his health, never good, forced his retirement from practice in 1909. His associates in Winona were outstanding in the medical profession of the state: J. B. McGaughey, E. D. Keyes, Donald B. Pritchard, H. Lichenstein, Oswald Leicht and Hugh F. McGaughey, son of J. B. McGaughey.

Dr. Lane was a member of fraternal organizations, among them the Masonic lodge. He was a founder of the Olmsted County Medical Society, when it was re-established in December, 1885, a member of the Southern Minnesota Medical Association, the Minnesota State Medical Society (from 1886), the American Medical Association and the Winona County Medical Society. His state license, No. 677 (R), issued on January 10, 1884, was filed in Olmsted County on February 21 of that year.

On his retirement from medical practice Dr. Lane, drawn by the climate of

the Northwest and the Pacific Coast as favorable to his hobby of horticulture, lived in the West for two years, first in Spokane, Washington, and next in California. From 1911 into 1913 Dr. and Mrs. Lane were in Predmore and Simpson, to care for the venerable Mr. and Mrs. J. W. Fulkerson in their last years. From 1913 into 1916 Dr. and Mrs. Lane were in St. Paul, and in the latter year removed to Evanston, Illinois, to be near their only child, Ruth Lane (Mrs. Edward R.) Ladd. Of ample means, the doctor in Evanston, as elsewhere, engaged in his hobby of raising flowers and fruit; his beautiful gardens still are recalled.

Talented and able, quiet, reserved, and always kind, Dr. Lane is well remembered. He died in Evanston on September 4, 1921, after two years of complete invalidism, the result of a stroke. After her husband's death Mrs. Lane made her home with Mrs. Ladd. Mrs. Lane died on September 12, 1934, and was buried beside her husband in the Evanston Memorial Park Cemetery. Ruth Lane Ladd, a graduate of Northwestern University, has given Dr. Lane's medical diploma to the university's medical department for its archives.

H. H. Lang, according to the *Minnesota, Dakota and Montana State Gazeteer and Business Directory* of 1884-1885, was in Byron, Olmsted County, in that period. Other mention of this physician has not been noted by the writer.

Benjamin F. La Rue was a physician in Eyota, Olmsted County, for about a year from November, 1868, into November, 1869. Although his birthplace and parentage have not been learned, it seems probable, judging from his association with Wabasha County, that he was related to the La Rue family of that region: Professor G. S. La Rue, who in the eighties was a druggist, bookseller and grocer of Plainview, came to Plainview with his parents when he was ten years old. Charles La Rue, of Greenfield, an early settler of the county, came there in 1862.

In Eyota Dr. La Rue had his office in the residence of Mr. B. A. Grubb. When he left Eyota, it was evidently to improve his professional knowledge, for in 1870 he was graduated from Rush Medical College. In that year he began practice in Lake City, Wabasha County, and for the next nine years was in Lake City or in Read's Landing, the latter also on the Mississippi River, near Wabasha.

In notes about a meeting of the Wabasha County Medical Society *(History of Wabasha County,* 1884) held on December 8, 1870, at the office of Dr. Francis H. Milligan, of Wabasha, mention was made of two new names, F. Lessing and B. F. La Rue), on the roster. "The other name [La Rue] new in the record, was the recording secretary. How or when these two joined does not appear, nor when Dr. B. F. La Rue of Lake City was chosen secretary, but they entered by the 'strait gate' for they were not the kind of men to climb up some other way." Dr. La Rue again was elected secretary on January 16, 1872, at a meeting at the office of Dr. Nathaniel F. Tefft, of Plainview.

In 1879 Dr. La Rue removed from Wabasha County and southeastern Minnesota to Appleton, Swift County. He was licensed in Minnesota on November 26, 1883, receiving certificate No. 402 (R). He was listed as at Appleton in successive issues of the directory of the American Medical Association from 1906 to 1916, inclusive.

Joseph Alexander Leonard (1830-1908), although a qualified physician of excellent training and a leading citizen of Rochester, Olmsted County, for fifty years, neither practiced medicine in Minnesota nor used the title "Doctor," it

is believed, in this state. A sketch based on detailed accounts of his life is given here because of his long and distinguished career, in which he contributed much to county and state in many positions of responsibility, some of which had to do with medical affairs.

Born on January 24, 1830, at Cambridge, Maryland, Joseph Alexander Leonard was the youngest of the five children of the Reverend William Leonard, member of the Philadelphia Conference of the Methodist Church, and Harriet Laverty Leonard; these parents were natives respectively of Salisbury, Maryland, and Berks County, Pennsylvania. After some years at West Chester and Columbia, Pennsylvania, the family in 1840 removed to Philadelphia, and there Joseph A. Leonard received his early education and worked in a dry goods store and in a book publishing house. When he was seventeen years old he entered the office of Professor James McClintock, lecturer on anatomy and surgery at the Philadelphia Medical College. He was graduated from this college three years later, in 1851, still six months under legal age. Dr. Leonard practiced medicine at Dowagiac, Michigan, until the summer of 1853, when he removed to Whitewater, Wisconsin. In Whitewater he continued practice for a year and a half and began newspaper publication. In December, 1856, with his partner he moved the *Whitewater Gazette* to Waukesha, Wisconsin, and consolidated it with the *Waukesha Plain Dealer*, founding the *Waukesha Republican*. In the spring of 1858 Dr. Leonard went to Madison to serve as clerk of the committee of the state legislature appointed to investigate loans of the state school funds.

In June, 1858, Dr. Leonard arrived in Rochester, Minnesota, and here he studied law under the Hon. M. W. Fay, was admitted to the bar, became Mr. Fay's partner, and in 1859 became county attorney, the first to be elected in the county; under state government the office of county attorney superseded that of district attorney, which had obtained under territorial government. Appointed by President Lincoln, Dr. Leonard was the first Republican postmaster at Rochester. During the Civil War he was appointed by the President a captain of commissary and served from May, 1864, until the close of the war with the First Division of the Sixteenth Army Corps, a command which included four Minnesota Regiments. At the close of hostilities he was stationed at Selma, Alabama, as depot and post commissary; he returned to Rochester in August, 1865, with the brevet rank of major.

In November, 1865, with Walter S. Booth, Dr. Leonard purchased the *Rochester Post* and returned to newspaper editing and publishing. Beginning in January, 1868, he served two terms as president of the Minnesota Editorial Association; in 1868 also he was elected state senator from Olmsted County. In May, 1874, appointed by President U. S. Grant, he became register of the United States Land Office at Jackson, Minnesota, an office which he held until August, 1875. In the latter year he was appointed by Governor Cushman Davis of Minnesota a member of the first board of directors of the Minnesota Inebriate Asylum, at Rochester, and was treasurer of the board until he resigned in 1876; this hospital, as stated elsewhere, before completion of the buildings, and after much argument as to its proper function, became the Second Minnesota Hospital for Insane, which was opened officially on January 1, 1879.

Between July, 1881, and July, 1893, the Honorable Joseph A. Leonard was successively United States consul at Leith, Scotland, two years; consul general at Calcutta, India, three years; and consul general at Shanghai, China, four years. During intervals between assignments he published the *Rochester Post*. From 1896 to 1903 he was probate judge of Olmsted County.

Joseph A. Leonard was married on October 30, 1861, to Kate Cowles, of Rochester. Born in New York on December 19, 1842, Kate Cowles was a daughter of Zalmon John Cowles, a native of Litchfield County, Connecticut, and Sarah Huber Cowles, who was born in New York. Mr. and Mrs. Cowles were married in Geneva, New York, in the late eighteen thirties and came to Olmsted County, Minnesota, in 1858. Their children were Martha, Helen A., Kate, Augustus B., Torris, Sarah V. and Frances Kachicqua. Helen Cowles was married on September 8, 1869, to Dr. Reginald M. Reynolds *(q.v.)*, of Rochester, later of Fergus Falls, and finally of Redlands, California. Frances Kachicqua Cowles became the wife of the Hon. Elmer E. Adams, of Fergus Falls.

An undertaking of the last nine years of Dr. Leonard's life was the gathering and preparation of historical and biographical data toward a local history; Leonard's *History of Olmsted County* appeared in 1910, two years after the death of its chief author, on December 28, 1908. Mrs. Leonard died on January 17, 1909, survived by her two daughters, Miss Maude Leonard, of Rochester, and Mrs. Kate Leonard Kelly, of Chicago.

John Quincy Adams Low (commonly, Quincy A. Low), long in Wabasha County, was for a time in 1873-1874 a physician and surgeon in Rochester, Olmsted County.

Born in Vermont in 1848, John Quincy Adams Low came west with his parents in 1860 to Wiscoy Township, Winona County, Minnesota. The boy spent his early years on the home farm and attended the local school. At seventeen years of age he enlisted, on February 21, 1865, in the Second Minnesota Regiment of Cavalry, from which he was mustered out on November 22, 1865.

On returning home from the service he entered Hamline University, then in Red Wing, Goodhue County, where he completed four years of study. In the next three years he read medicine in the offices of Drs. William H. H. Richardson and Franklin Staples, of Winona, and during this time attended two courses of lectures at the medical department of the University of Michigan. In 1873 he was graduated with the degree of doctor of medicine from the Long Island College Hospital, New York, and at the same time received an addendum diploma for special work in operative surgery.

Although the Rochester residence was not mentioned in the history of Wabasha County (1884), from which a portion of the foregoing was drawn, it is obvious that Dr. Low came to Rochester immediately after graduation. There were occasional newspaper comments on his practice; for instance, that on December 9, 1873, he assisted Dr. Hector Galloway to perform "an operation for hairlip on an infant child whose parents live at Rock Dell."

In January, 1874, Dr. Low removed from Rochester to Wabasha, where he had an office over Jewell's Hardware Store. He was married on January 24, 1875, to Miss C. E. Finch, of Hennepin County. In 1877 he became a member of the Wabasha County Medical Society and for several years served as secretary; he early was admitted to the Minnesota State Medical Society and the American Medical Association. Licensed in Minnesota on November 24, 1883, he received certificate No. 370 (R), which he duly filed in Wabasha County on December 13. Dr. Low was county health officer in 1883, at least, and was a member of the local United States board of pension examiners in the early eighteen nineties.

After more than twenty-five years in Wabasha, Dr. Low removed to a farm home near Crookston, it is said, and there continued his medical practice. On November 15, 1907 the *Journal of the Minnesota State Medical Association and*

the Northwestern Lancet stated that Dr. Low had removed to California to make his home.

Jesse N. McLane, physician and surgeon, second member (Dr. Martin T. Perrine, the first) of his profession in the frontier settlement of Rochester, Olmsted County, arrived from Indiana in the summer of 1855. Record indicates that for the first few years of his residence he was more active as a city and county officer and promoter of real estate than as a practitioner.

On July 25, 1855, Dr. McLane was appointed the first register of deeds of Olmsted County by Territorial Governor Willis A. Gorman and on October 9, 1855, duly was elected to the office, which he held into 1857. In 1856 he was one of a committee to arrange for the erection of a suitable building for the use of the county officials, and in that year also he was one of a committee to solicit subscriptions to send an agent to Washington, D. C., in the interest of the Root River Valley Railroad. In 1857, the county being without a court house, the courts were held in Morton's Hall, on Main Street, and the meetings of the county commissioners in Dr. McLane's building, a small frame structure, the first of the sort on Broadway, on a portion of the present site of the Cook Hotel Building. In 1861 the doctor was chairman of the supervisors of Rochester Township and that summer was prominent in organizing a great county celebration, in Rochester, of Independence Day. During this early period, it has been said, his residence was a few blocks off Broadway, on Zumbro Street, which then was little more than a footpath.

When Rochester Lodge No. 21 (A.F. and A.M.) was organized in Rochester on August 24, 1857, at Le Sueur Hall, Dr. McLane was one of the charter members and was made Senior Deacon .

The first reference noted to Dr. McLane as a practicing physician appeared in the *Rochester City Post* on July 4, 1863, announcing his professional card elsewhere and describing him as a prudent, skillful and experienced physician; his office and residence were with Lewis McLane on Franklin Street, between College and Second Streets. The card appeared at intervals until in October, 1864, the doctor went to New York City for six months to attend courses of medical lectures. Editorial comment was: "A well-read library during the intervals of an extensive practice and an occasional attendance upon medical lectures are the invariable marks of a reliable and skillful physician, who has already gained and who will maintain a standing in the front ranks of his profession."

In the autumn of 1865 Dr. McLane, genial and highly esteemed citizen, with his family removed to Huntsville, Alabama, thence to Meridian, Mississippi, and next to Pensacola, Florida. Although it has been stated that Florida remained his headquarters, he was in Chattanooga, Tennessee, in 1873 and for a considerable time thereafter as one of a company engaged in the construction of a blast furnace for the manufacture of iron.

John Lewis Martin (1806-1885) was from 1856 to his death, farmer, Wesleyan Methodist minister and actively practicing homeopathic physician in southern Minnesota, successively in Mower, Olmsted and Dodge Counties. He has been mentioned as in Fillmore and Jackson Counties also, but exact record has not been available. Dr. Martin has been described as a small, wiry, bewhiskered man, dignified and respected, who commonly rode on horseback to make his professional calls and to relieve in the pulpits of his brother clergymen.

Born on September 17, 1806, in Madison County, New York (his birthplace sometimes is given as Albany, Albany County, New York) John Lewis Martin

was one of a family of seven children whose parents were John L. Martin, from the north of Ireland, a teacher in a school for boys, and Mary Martin, a seamstress, a native of Edinburgh, Scotland. In early adult years he was a clerk in a store. His medical training is unknown; one of his descendants has recalled that he had a medical certificate that had been issued in New York State. Dr. Martin was married in Albany, New York, to Emmeline J. (the name later was changed to Elizabeth Ruth at his request) Berghes, a teacher of music. About 1850 he came with his wife and children to Valparaiso, Indiana, and in 1856, by ox cart, into Mower County, Minnesota, where he farmed in Section 15, Frankford Township, and practiced medicine over a wide surrounding region It is said that he conducted the first neighborhood school of the community in his log house, and that during the diphtheria epidemic of 1866 he rendered valiant service. Mrs. Martin died on December 10, 1870, in her fifty-first year, and was buried in Frankford Cemetery. Still in Frankford in 1874, it is said that during the next two years Dr. Martin and his children were living in or near the village of High Forest, Olmsted County.

For some months in 1876 and early 1877 a Dr. Martin, a homeopath, was in Eyota, Olmsted County, in partnership with Dr. Isaac M. Westfall, and it appears probable that this was Dr. John L. Martin. Dr. Westfall long was a well-known farmer, preacher and practitioner in and near Rochester; his stay in Eyota was short.

In 1877 Dr. Martin settled in Wasioja, Dodge County, so that his children, Fannie, Julia, Fehlena, Amanda, Elizabeth, John, Lewis and Albert (three other children died in infancy) might be educated at the Wasioja seminary. (The seminary, founded by local Free-Will Baptists in 1860, after a few years came under the sponsorship of the Wesleyan Methodist Church. In the course of time the school, as noted elsewhere in this paper, experienced several changes in name as well as a decline in fortune. After the building burned, in 1905, the seminary was not reorganized.)

In Wasioja Dr. Martin engaged in preaching and medical practice. He died in Wasioja, from cardiac disease, on September 22, 1885, and was buried beside his wife in Frankford Cemetery. In 1942 his children were long since dead; several grandchildren and great-grandchildren survived.

St. V. Martinitz, native of Bohemia, was in southern Minnesota in the eighteen seventies and perhaps longer. For a few months in 1874 he was in Owatonna, Steele County. Beginning in August, 1874, the newspapers of Rochester, Olmsted County, published his professional card, "Eclectic physician, office over Central Meat Market. County and city practice," and various notes about his activities. His practice extended as far as Rock Dell to the west and Greenwood Prairie to the east; his hazardous experiences with floods in the Zumbro River and its tributaries, and with storms, were those of his contemporaries.

When in 1878 Dr. Martinitz with his wife spent several months in Europe visiting Bohemia, studying in Vienna, Munich and Paris, his practice was conducted by young Dr. Seth Scott Bishop, newly arrived in Rochester from Fond du Lac, Wisconsin.

In January, 1879, Dr. Martinitz removed from Rochester to Northfield, Rice County. In 1893 a letter came from him, then practicing in Cedar Rapids, Iowa, under the "time act" of that state, informing a Rochester resident that he had been appointed a member of the "Official Council of the World's Congress." In 1896 he was listed in a four state medical directory as of Cedar Rapids; his name

did not appear in the first edition (1906) of the directory of the American Medical Association or in later editions.

William Worrall Mayo (1819-1911), one of the earliest physicians and surgeons in the state and in Olmsted County, and his two sons, William James Mayo (1861-1939) and Charles Horace Mayo (1865-1939), all of Rochester, Olmsted County, held a unique position in the practice of medicine in Minnesota. The sons from boyhood received professional training under their father, were graduated each from an excellent medical school of the Middle West and came into practice in the formative period of medicine and surgery when asepsis and antisepsis had been recognized but were not yet established.

William Worrall Mayo was born in the parish of Eccles, near Manchester, England, on May 31, 1819, a son of James Mayo and Ann Bonselle Mayo, who was a daughter of John Bonselle and Tenneson Worrall Bonselle. Members of the Bonselle and Tenneson families crossed to England with the Huguenots fleeing France; the Worralls were a well-established family in Manchester. James Mayo was of the Wiltshire Mayos, among whom were physicians and scientists, who in 1527 came into Lancashire; in his line for generations the names *William* and *James* had been used. When James Mayo died in 1826 his widow removed to the village of Salford, near Manchester, with the six children, Ann, James, William Worrall, Esther, Sarah and Mary.

William W. Mayo received his early education in the schools of Salford. Later he was a special student in chemistry, physics and microscopy under John Dalton, the physicist, in Manchester. He first studied medicine at the Pine Street Medical School in Manchester and later at medical colleges in London and Glasgow. In 1845 he came alone to New York City, where for some months he was employed in the drug room of Bellevue Hospital, and 1846 he began the westward journey from New York by inland waterways that led to Lafayette, Indiana. There, in 1849, after engaging in different occupations, he resumed the study of medicine, under the preceptorship of Dr. Elizur H. Deming. On February 14, 1850, he was graduated from the Indiana Medical College, at La Porte, of whose faculty Dr. Deming was a member, and returned to Lafayette to begin practice. In 1851 Dr. Mayo entered partnership in practice with Dr. Deming and in the following year, an accepted story runs, with Dr. Deming and Dr. William H. Byford attempted to revive the Indiana Medical College, which had closed in 1850; the effort was abandoned when fire destroyed their building and equipment.

On February 1, 1851, William W. Mayo was married at Galene Woods, Michigan, to Louise Abigail Totten Wright. Of Scotch and English descent, Louise Wright was born in Jordan, Onondaga County, New York, on December 23, 1825; an orphan since childhood, she came in 1843 to the home of relatives in Michigan and later to La Porte, Indiana, where she met William W. Mayo. A sturdy, handsome young woman, she was the equal in courage and intelligence of her husband. The first child of the marriage, Horace, died in infancy; a daughter, Gertrude Emily, was born in 1853.

In 1853 Dr. Mayo accompanied Dr. Deming to St. Louis, Missouri, where the older man was joining the faculty of the medical department of the University of Missouri. In St. Louis Dr. Mayo served as unofficial assistant to Dr. John T. Hodgen, the professor of anatomy at the medical school; in the spring of 1854 he applied for and received an ad eundem degree of doctor of medicine from the university, and returned to Lafayette. His increasing distaste for the malarial climate of Indiana, however, soon drove him forth, on an eventful journey to the

Northwest that brought him to Minnesota by way of a Mississippi River packet that he boarded at Galena, Illinois.

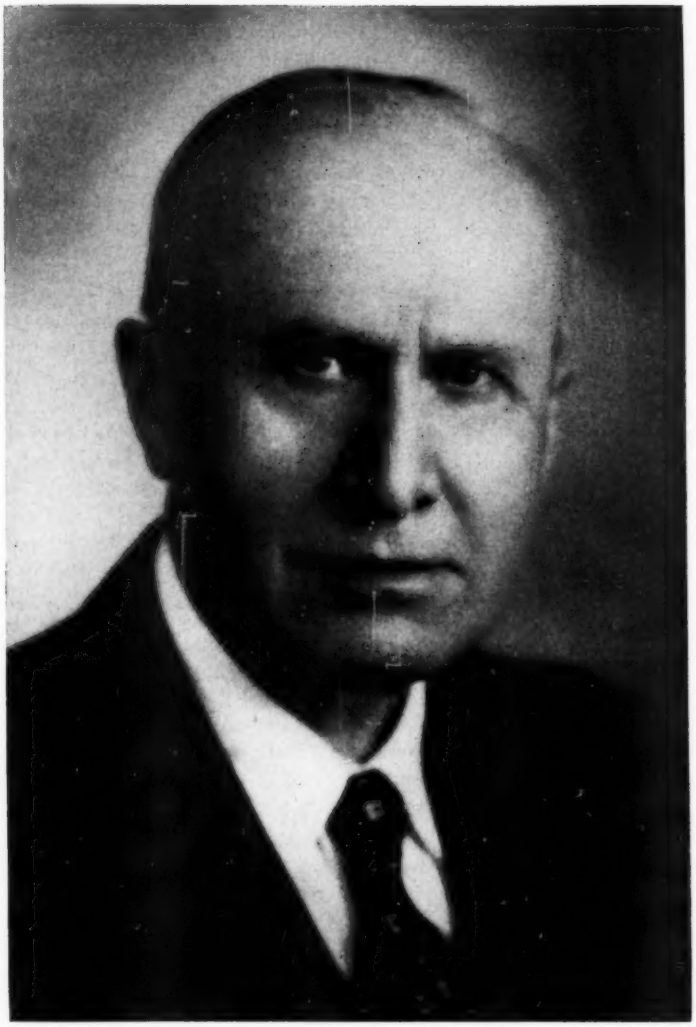
Arrived at St. Paul, then a town of about 4,000, he was favorably impressed and at once returned to Indiana for his family. After his home was established in St. Paul, Dr. Mayo in the ensuing two years, eager to learn more of the picturesque new country and to study Indian customs, made various trips on foot and by canoe into the North Shore region of Lake Superior; from the village of Superior he engaged in frontier activities. On appointment by Governor W. A. Gorman he became a commissioner of Superior County (Duluth County) and for some weeks was temporary chairman of the board; with a Mr. Burke he designated a county seat, the site of which now is unknown. As deputy sheriff of Chisago County he took the census in the lake shore region. For the Northwest Exploring Company he visited prospectors to adjudge the worth of their copper claims; and near the present site of Duluth he staked out a homestead claim, which later was jumped.

In the spring of 1856 Dr. Mayo followed the Minnesota River southwest as far as Cronan's Precinct in Nicollet County, near Traverse des Sioux and four miles north of Le Sueur. There his wife joined him and for three years the family lived on a farm that belonged to an uncle of Mrs. Mayo. Although not farming, the doctor allied himself with local agrarian affairs and ever after was concerned in furthering the interests of farmers. In this locality he returned to the practice of his profession, combining practice, as did other pioneer physicians, with incidental occupations to earn a living. Early in 1859 he removed to the village of Le Sueur where with the aid of his brother James, who had emigrated from England a few years earlier, he built a comfortable home for his growing family. Two children had been born in Nicollet County: Sarah Frances, who died in infancy, and Phoebe Louise (1856-1885). In this home* on June 29, 1861, William James Mayo was born.

Because of his ability and his multiple activities Dr. W. W. Mayo by 1861 was known and esteemed over a wide territory as citizen and physician. In August, 1862, when draft boards were established to act on applications for exemption from military service in the Civil War, he became the examining surgeon for Le Sueur County. In that month, when there came the uprising of the Sioux Indians and the siege and battle of New Ulm, Dr. Mayo was one of the physicians who hastened to New Ulm to care for the wounded. When the uprising was over and thirty-eight of the Indian leaders were hanged at Mankato on December 26, 1862, Dr. Mayo came into possession of the body of Cut Nose, a warrior whom he had encountered unpleasantly some years earlier when the chief and two other Indians had accosted the doctor on one of his lonely professional rides and attempted to steal his horse. The skeleton of Cut Nose Dr. Mayo carefully prepared and articulated, and in later years at Rochester he used it to teach his boys Will and Charlie osteology.

*In 1932 the house was designated by the Minnesota State Highway Department as a historical site; in 1934 Drs. W. J. and C. H. Mayo presented the property to the village of Le Sueur.

(To be continued in the February issue.)



J. F. NORMAN, M.D.

President, Minnesota State Medical Association, 1951

President's Letter

January first, this year, is much more than the beginning of a new year; it is the beginning of the second half of the twentieth century. This may mean that we are beginning a new epoch with continued advances in the arts, sciences and techniques of the past fifty years. In the half century just past we have witnessed the most remarkable progress. The Medical Sciences have kept apace with the others, and this new knowledge has been applied to extending man's life with alleviation of much of his suffering. The average citizen lives longer, more comfortably, and he knows that he is protected from the great epidemics which used to decimate mankind. This has been brought about by free medical men, working because they wished to, and not at the behest of a super government which might place the scientist and worker where it wished, and might even order the researcher and the physician to make reports which adhered to the party line.

It was these past fifty years that saw the rise of the clinics which became so great a part of the scientific advancement of the time. The physician in practice also had available the great University Centers, and now the added advantage of having several educational courses brought to his own locality, furnished by the University Center.

Physicians were interested in the scientific advances of their time and also in the art of practicing medicine, which means the getting of this new knowledge to their patients. They were not politically minded enough or well-enough organized to realize that they were being confronted by an entirely new type of propaganda which would take from them the management of their own profession. It was at this point that the American Medical Association made the momentous decision of bringing the facts to the people. It was found that the physicians of the United States were not "too proud to fight." Out of this new policy of the American Medical Association came the publicized campaign which sought to bring to the public the view point of organized medicine. The year 1950 has been a memorable one.

Looking ahead, we hope to see a continued advance in the science and art of caring for the ill. We are justified in expecting great progress, as with free men working without governmental restraint, greater accomplishments than we dreamed of in the past should be ours in the future.

Now, I would express my very great appreciation of the honor you have been so kind as to bestow on me. It will give me great pleasure to have an opportunity to meet many of the men of the state. This will be an inspiration to me as it has been in the past. I shall attempt to perform any task that may come to me. It will be a source of comfort to know that Mr. R. R. Rosell, our Executive Secretary, and others will make smooth the work of the Minnesota State Medical Association, and that Mr. Manley Brist, our legal advisor, will continue to give us his very valuable aid.

I wish to extend to the members of the Minnesota State Medical Association my very best wishes for a very Happy New Year.

J. F. Norman

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

AMA DUES

IT is not surprising that confusion exists in the minds of some of our members as to American Medical Association dues and membership. The following, we believe, is an accurate statement of the present status of the subject.

Membership dues in the Minnesota State Medical Association for 1951 are $30.00; in the AMA $25.00. Both sets of dues were payable with County Society dues to the treasurer of the County Society on January 1, 1951. The AMA membership dues of $25.00 includes a subscription to the *Journal of the American Medical Association.*

In order to be listed as a Fellow of the AMA in 1951, an additional $5.00 is payable to the AMA direct, at 535 N. Dearborn Street, Chicago 10, on receipt of a bill for such dues. A Fellow of the AMA is entitled to attend the scientific meetings of the AMA and to take part in such meetings. He is also privileged as a Fellow to receive one of the specialty journals published by the AMA in place of the *Journal of the American Medical Association.* Only an active member of the AMA may become a Fellow.

Commissioned medical officers of the U. S. Army, Navy, Air Force and Public Health Service, upon nomination by the Surgeon General of the respective service, and the permanent medical officers of the Veterans Administration, who have been nominated by its Chief Medical Director, may become Service Fellows upon approval of the Judicial Council of the AMA. Service Fellows need not be members of a County or State Medical Association nor the AMA, and they do not pay Fellowship dues. They, however, do not receive the *Journal of the American Medical Association* except by payment of the subscription price of $15.00.

If a local County Society regulation permits, a Service Fellow may become an active member of that society and enjoy the same privileges as any other active member.

A regulation which is not generally appreciated is that an active member becomes delinquent if his dues are not paid by December 31 of the year for which dues are prescribed and shall forfeit his active membership in the AMA if he fails to pay the delinquent dues within thirty days after notice of his delinquency has been mailed by the secretary of the AMA to his last known address; also, that members of the AMA who have been dropped from membership for non-payment of dues cannot be reinstated until such indebtedness has been discharged.

Previously, membership in a County Medical Society and State Medical Association automatically meant membership in the AMA. That applied up to 1950—the first year AMA dues were required. Now the rather incongruous situation exists that a physician can be a member of a component County Society and State Medical Association but not of the AMA, which is composed of the State Medical Associations. As representation in the AMA House of Delegates is based on one delegate for every 1,000 AMA members or fraction thereof from each state, the percentage of state members who pay their AMA dues becomes important.

CORTISONE AND ACTH

CORTISONE and ACTH are powerful drugs—atomic-like in action! I recall the lectures at the Mayo Clinic of that philosopher-king, the late Dr. Henry Plummer, on myxedema patients. He would compare the myxedema patient to an automobile deeply mired in the mud. To free the car, he explained, one would have to slowly ease it out of the mud. A quick pull, or the application of an explosive force would liberate the car to be sure, but it would also tear it to pieces with the force. So Doctor Plummer, knowing the myxedema patient was mired in deep physiological stasis due to lack of thyroid substance, would, by the same process of reasoning as in the liberation of a mired car, ease the patient back to the highway of well-being by prescribing small doses of thyroid to start with and, gradually, over weeks and months, increasing the dose until normalcy was achieved.

I have followed the use of Cortisone and ACTH, through excellent reports. Just recently have these drugs become universally available to the medical profession. I have not yet used them. I fear and respect their latent powers. Were I to use them, I would surely follow Doctor Plummer's rule in their administration—small doses over months of time in order to give the mired body an opportunity to ease out of the deplorable condition it is in. One must remember that the majority of conditions for which these drugs are used, have developed over a period of years. To expect to bring about a complete restoration in a few weeks' time is too drastic. Is it any wonder that one encounters serious complications such as mental changes, diabetes, perforated gastric ulcers, skin manifestations of hirsutism, hyperpigmentation, striae atrophica, to say nothing of possible injury to tissues—injuries not observable right away, injuries that may, in time, show up and possibly cause more serious trouble than that with which the patient is already suffering. It seems to me, too little time has passed by to allow these powerful drugs to be used universally. More time and study, especially on more remote effects, should be given. Doctor Plummer's technique in the administration of these drugs should be given a thorough consideration.

These drugs are really ATOMIC in power!

J. J. HEIMARK, M.D.

PUBLIC RELATIONS

ON DECEMBER 3 and 4, the Third Annual Medical Public Relations Conference was held at the Statler Hotel in Cleveland. Mr. Lawrence W. Rember, secretary to the General Manager, Dr. George F. Lull, and his staff deserve a great deal of credit for having arranged for a most informative meeting addressed by members of the profession from all over the country who had had experience in the various phases of public relations. The meeting was attended by some 340 members of the profession and executives of various county and state medical societies. The attendance demonstrates the interest manifest in the subject. Until two years ago, the AMA laid little emphasis on the many faceted subject of public relations. With the employment of Whitaker and Baxter and the increase in dues to provide for intensive public relations activity, the picture has changed, and the threat of removing medical practice from the domain of private industry has been temporarily averted. There is no reason, however, for members of the medical profession to be complacent or to rest on their oars in approaching the new year or for that matter the years to come. Washington is full of schemers who will submit bills to Congress from time to time with socialism in view.

The establishment of proper public relations between the medical profession and the public cannot be left to the AMA alone. Each state medical association and each county society should have its Public Relations Committee and, fully as important, each individual physician should make it his business to see that his relations with his patients and the public are as they should be. Medical public relations constitute doctor-patient relationship in its many phases. It means providing the best medical care possible to the public at a price they can afford to pay. It means availability of a doctor when he is needed and the elimination of unnecessary operations and medical care. It means taking part in civic affairs and contributing to community chests.

Our profession has been subject to vilification on the part of those who would like to sacrifice the welfare of the public by substituting government medicine for private practice in order to satisfy their political ambitions. Some of the falsifications of certain of these political figures have been answered in an outstanding manner by our national president in 1950, Dr. Elmer L. Henderson of Louisville, Kentucky. The choice of Dr. John W. Cline of San Francisco to head the AMA in 1951 was wise. He has shown himself to be able in word and deed and should be an inspiring leader.

Some minor points were brought out at the Cleveland meeting that local societies might wish to note. In some societies, special meetings are arranged for the new members just embarking on the practice of medicine. Few have had any instruction in medical schools on the economic phase of practice. Indoctrination programs might well include discussion of the matter of fees. Some of the newer members have expressed the opinion that they must charge high fees inasmuch as they have been in the service and the older members of the profession have been reaping a harvest while staying at home. They forget mayhap that there was a World War I. At any rate overcharging is poor public relations. The new mem-

(Continued on Page 80)

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

AMA INTERIM SESSION CITES PROGRESS, NEW GOALS

Considered "the finest four-day refresher," the AMA Clinical Session held in December in Cleveland featured reports on progress made in the National Education Campaign, renewed vows for continued efforts to defeat the socialized medicine threat, and set forth toward new goals in medical public relations during 1951. Approximately 5,000 doctors from all over America met at Cleveland to hear speakers and listen to reports of past activities and plans of 1951 programs.

Trustees Vote "Medical Aid" Fund

One of the most dramatic developments came when it was announced to the House of Delegates that the Board of Trustees had voted to provide a "half million dollars out of its National Education Campaign Fund, which was raised to defend medical freedom, for the aid and support of medical schools which are in need of additional financing." The announcement was made by Dr. Louis H. Bauer, chairman of the Board of Trustees, who pointed out that there is growing public awareness that federal subsidy has come to be a burden, not a bounty, for it is bringing intolerable increases in taxation, and "is dangerously increasing federal controls over our institutions and lives of our people."

PRESIDENT PRESENTS KEY VIEWPOINTS

Dr. Elmer L. Henderson, president of AMA, presented to the House of Delegates, several major positions of the AMA. Emphasizing the policy of private aid to medical education, rather than control-producing federal subsidy, Dr. Henderson stated:

"Many other sources of financial aid to medical education have been overlooked, and the profession's responsibility to assist actively in gaining additional support for the schools has not been fully recognized. Events of the past year have made it clear that there are those who interpret the American Medical Association's opposition to the bills for federal aid to medical education presented before Congress, as indifference to the problems of the medical schools and the needs of the nation for adequate facilities for the training of physicians."

He declared, "We must make it clear that the profession is not indifferent to these problems. Let us face clearly our obligation individually and collectively to provide significant financial assistance to the medical schools and to study other ways by which we can help them meet their problems."

The president explained the splendid work being done with respect to the program of hospital standardization. He cited the meetings of the American Medical Association with the American Hospital Association, the American College of Surgeons and the American College of Physicians, as making real progress toward developing a cooperative program "in which the best interests of the public, the hospitals and the profession will be considered."

Dr. Henderson stressed the continued need for establishment of more public health units throughout the country, stating, "Effective and properly operated public health units is basic to the maintenance and improvement of the health of the people."

Praises Small Business' Aid

Summarizing the AMA's National Education Campaign, Dr. Henderson lauded millions of Americans throughout the nation for their active support of this vital program:

"That unselfish, spontaneous support came from more than 65,000 individuals, firms and associations, with the vast majority located in the small cities and small towns of America. They represented not 'big business' but the 'grass roots' life of the nation."

Warns of Overconfidence

"The November elections brought defeat to a number of the most outspoken advocates of compulsory health insurance, and also to a number of candidates who hedged on the issue. The elections also provided a general repudiation of the over-all trend toward state socialism," said the AMA president. However, he sounded a note of warning against overconfidence because of these good results:

"We still have much work to do before all the basic issues confronting us are finally resolved. To relax now, under the delusion that we already have achieved complete victory, would be to invite a renewed attack by the socializers at a later date. We cannot afford to relax either our vigilance or our effort."

WHITAKER AND BAXTER REPORT ON PROGRESS

A full and factual report on the public significance of medicine's advertising campaign was presented by Miss Leone Baxter of Whitaker and Baxter, before the House of Delegates. Miss Baxter related that, "No profession ever has had a more spectacular demonstration of public confidence than that given to American doctors in their nationwide October advertising program. Never before has one profession, business or industry found thousands of unrelated groups, in virtually every area of the country, coming forward in its defense."

Miss Baxter told the delegates that the purpose of the advertising program was to prove that the American public does not want a Government-directed medical system and is with medicine in the battle against compulsion. She said that people in every corner of the country came forward "to state their views, to take their public stand with medicine, and to spend two million dollars of their own money to do it." She commented:

"This support did not come from 'big business' and 'reactionary interests' as Mr. Oscar Ewing recently proclaimed it would. It came, with real grass roots strength, from tens of thousands of small advertisers along the Main Streets of America—from drug stores, insurance agents, banks, movies, utilities, churches, medical care plans, dry goods stores, hospitals and clinics, restaurants, laundries and plumbers. . . .

"It (the doctors' campaign) has impelled an important segment of the country to declare publicly its confidence in the medical profession and in medicine's ability to meet the medical needs and solve the medical problems of the people."

Rounding out the report, Clem Whitaker, Director, National Education Campaign, summarized the campaign so far and previewed several aspects of the program for the coming year. Discussing progress medicine has made in the past critical years, Whitaker stated that when medicine was on the defensive, some of the tasks which looked hopeless were by-passed and often called for considerable public support which medicine hadn't then achieved. But, he added:

"Today, American medicine is in the strongest public position it ever has held, because the people have been given the facts on this issue and have spoken out sharply against the abridgement of individual freedom in our country."

Emphasizes Labor's Position

"There *is* enlightened leadership in labor which has no intention of following Washington bureaucrats and socializers down the dead-end street which leads to regimented serfdom," Whitaker averred. He said that winning labor support is one of AMA's important objectives for 1951:

"The unions have turned against the Communists who infiltrated their ranks—and are throwing out those who are disloyal to America. And now there are the first signs that many in labor are beginning to recognize that State Socialism and Communism are next of kin. That isn't only good news for doctors; that is good news for all America. . . .

"In Camden, Arkansas, during the American Medical Association's nationwide advertising program, the AF of L unions of that community published a full page of supporting advertising, taking public position beside the doctors of their city. That was an impressive indication of the grass roots labor support which medicine can win when doctors take the facts to the members of their local unions."

LABOR MAN SPEAKS FOR DOCTORS' PROGRAM

American doctors attending the Clinical Session heard the stirring talk of a union president, affirming his organization's stand with American medicine against socialization in any form. The speech of William L. Hutcheson, General President, United Brotherhood of Carpenters and Joiners of America, brought these heartening words before the House of Delegates:

"I am against socialized medicine. So is the organization which I have the honor of heading. . . . This probably does not jibe with the feelings of a good deal of the rest of the labor movement, because much of the pres-

sure for 'free' medical care is coming from labor organizations. But it does reflect my sentiments and the sentiments of our recent convention. . . .

"Saving a dollar has never been distasteful to me. In fact, I like to get as much for my money as the next man. That is one of the reasons why I oppose socialized medicine. It is no bargain. It looks cheap the way the backers present it, but when you dig down under the fancy layer of propaganda frosting you find that it can be mighty expensive. The British people have already discovered that fact."

Mr. Hutcheson cited figures showing that in the wealthier districts of London there is one doctor for 1,261 patients while in the poorer East End the ratio is one doctor to every 2,472 patients. In some of the other boroughs, the average is 2,897. The speaker remarked:

"If that isn't the 'one horse and one rabbit' recipe transferred from the meat pie maker's kitchen to the national health program, then I need new reading glasses. . . . For all the planning that has been done, there is still an uneven distribution of doctors in London. If the backers of the national health program are to achieve their objective of equal health protection for all, the next step must be to tell doctors when and where and how they are to practice. Therein lies my greatest fear of socialization."

Carpenters Want Freedom, Too

Mr. Hutcheson pointed out that carpenters are an independent lot, warning that socialization of medicine or any other industry or business would just as surely bring on socialization of his own profession:

"I do not know much about doctors, but I know quite a bit about carpenters. . . . The first bureaucrat who told a carpenter he had to work in Little Rock when he wanted to work in Lancaster would be gumming his food for lack of teeth. Carpenters want to be free agents; free to work where they want to; free to negotiate the terms of their wages and working conditions through collective bargaining; yes, even free to leave the industry and try their luck at something else if the spirit moves them.

"They will retain these freedoms only so long as all other groups retain them too. Socialization is like a wolf with a tapeworm; once it starts gnawing, it never can stop. Socialized medicine would only be the first bite out of our free enterprise system; it would not be many years before the carpenters would be feeling the teeth of socialization on the seats of their overalls. Anyway you look at it, socialized medicine is no bargain and the carpenters want none of it."

Respects Doctors' Stand

Mr. Hutcheson's union members, speaking through his speech, showed a high regard for medicine's public opposition to the inroads of socialism:

"We in the labor movement have our own cross of regimentation to bear. The fight you are making is part of the same war. It is a war against concentration of authority in a few hands in Washington. As a veteran of forty years in the labor movement, I know what it is to fight for human rights. I am happy to take my stand beside you."

THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Bldg.,

Saint Paul 2, Minnesota

JULIAN F. DUBOIS, M.D., *Secretary*

MINNEAPOLIS CHIROPRACTOR PLEADS GUILTY TO PRACTICING MEDICINE WITHOUT A LICENSE

Re: State of Minnesota vs. Earl F. Seeliger

On December 20, 1950, Earl F. Seeliger, thirty-two years of age, a licensed chiropractor with offices at 402 Wesley Temple Bldg., Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging him with the crime of practicing medicine without a license. Seeliger was sentenced by the Hon. Frank E. Reed, Judge of the District Court, to pay a fine of $200; the fine was paid.

The defendant Seeliger was arrested on December 6, 1950, following an investigation by the Minnesota State Board of Medical Examiners into a complaint made by Mrs. Rudolph Cimbura, 839 Como Avenue, Saint Paul. Mrs. Cimbura stated that she took her ten-year-old son to Seeliger in January, 1950, because the boy was ill. Mrs. Cimbura stated that, following an examination lasting approximately two hours, Seeliger made a diagnosis of influenza. Mrs. Cimbura stated that part of the examination consisted of having the boy hold a device in each hand, the device being attached to a machine by means of wires. Mrs. Cimbura stated that she asked Seeliger if the boy was not suffering from appendicitis. He replied: "No, it is a case of good old 1918 flu." The boy was given chiropractic adjustments on two occasions. Seeliger also prescribed and furnished certain drugs and medicines, notwithstanding the fact that he has only a chiropractic license. Mrs. Cimbura stated that the boy became seriously ill and was removed to a Saint Paul hospital. A doctor of medicine was called, who stated, following an examination, that the boy was suffering from acute appendicitis. The boy was operated upon and subsequently recovered.

Minneapolis Surgical Society

Meeting of May 2, 1950

The President, Ernest R. Anderson, M.D., in the Chair

THE AXILLARY ARTERY AND ITS BRANCHES

Their Variations as They Pertain to Radical Mastectomy

HERBERT W. PETERSON, M.D.
Minneapolis, Minnesota

A thorough knowledge of regional anatomy is one of the outstanding prerequisites which a surgeon must possess in order to complete a surgical procedure satisfactorily. In most instances, a knowledge of the usual anatomical findings is sufficient for carrying out the uncomplicated operation. Variations from the usual should be known in order that the surgical dissection can be facilitated.

Surgery of the breast, in order to be properly and completely expedited, requires a thorough understanding of the anatomical relationships of the axilla and its surrounding structures. This knowledge includes the usual textbook findings as well as the abnormalities which are not always described in a book of anatomy. With this thought in mind, this subject was selected for study and review. In the final analysis, the more meticulously and completely the axillary vessels and their tributaries can be stripped of their covering tissue, together with their adjacent nodes and fat, the better is the prognosis and chance for survival of the patient.

Anatomical abnormalities pertaining particularly to the blood vessels are often encountered. These variations must be accurately recognized in order that a thorough dissection may be performed without accident. Undue trauma incident to a lack of adequate knowledge could be damaging or even disastrous.

Sixty-seven axillas of cadavers were studied in the anatomical laboratory at the University of Minnesota. This study was concerned chiefly with the axillary artery and its first four branches. An attempt was made to determine the exact point of origin of these branches. Obviously, it cannot include all the possible variations from the usual because the series is not sufficiently large. However, it does represent an over-all picture of the common variable findings encountered when radical mastectomy is performed. The veins, although possessing many more branches and ramifications than the arteries, are considered to accompany their respective arteries. They also carry the same terminology. No attempt at description of surgical technique for radical mastectomy is intended. Each surgeon has his own modification of the original Halsted[2] operation. The primary interest of this study is focused upon the blood vessels of the axilla.

American medical literature appears to be rather limited in respect to this phase of the subject. The most comprehensive and enlightening study for comparison was that of Gesselevitsch,[1] a German anatomist, who was concerned mainly with the anastomoses of blood vessels and the collateral circulation in the region of the axilla and shoulder joint. His analysis was based upon the dissection of 176 cadaver axillas, together with nine x-ray examinations of axillary vessels injected with radiopaque materials. It has been interesting to note the general similarity of conclusions arrived at by Gesselevitsch when compared with those of this study.

For purpose of review, the axillary artery is a continuation of the subclavian artery. It begins at the lateral border of the first rib and terminates at the medial margin of the latissimus dorsi muscle. Beyond this its continuation receives the name of brachial artery. The entire axillary vessel measures approximately 5½ inches in length. Anatomists[2,4] usually divide it into three segments depending upon its relationship to the pectoralis minor muscle. The first, or most medial, portion measures about 1 inch in length and extends from the first rib to the medial border of the pectoralis minor muscle. The second division, about ¾ to 1 inch long, lies directly under the pectoralis minor muscle close to the insertion of the latter into the coracoid process of the scapula. This third and longest segment, from 3 to 3½ inches in length, extends from the lateral border of the pectoralis minor muscle to the inner border of the latissimus dorsi muscle.

As you may have noted, very little mention has been made of the fifth and sixth branches, namely, the anterior and the posterior circumflex humeral arteries. The reason for this is that these two vessels are, so to speak, out of bounds in the routine radical mastectomy. They are not often encountered unless they have direct communication in their origins with the subscapular artery. They are, however, very important in the collateral circulation and anastomoses in the event that the axillary artery is inadvertently or otherwise ligated or sectioned.

The axillary vein, although not dealt with directly in

Inaugural thesis.

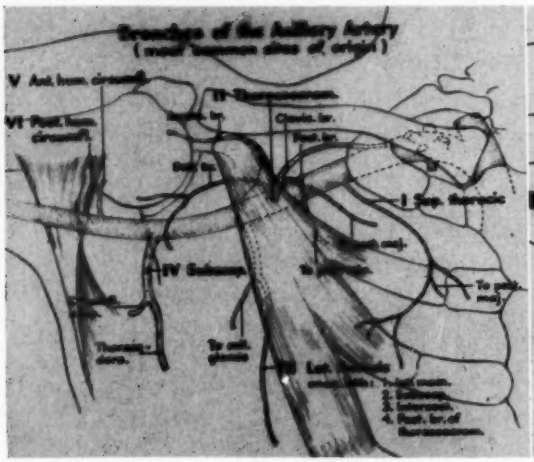


Fig. 1. Axillary artery. Most common sites of origin of its branches.

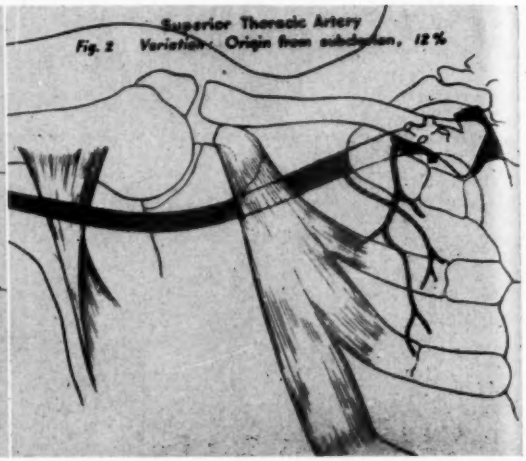


Fig. 2. Superior thoracic artery. One of its variations.

TABLE I. VARIATIONS FOUND IN THE SUPERIOR THORACIC ARTERY

Superior Thoracic Artery (a. thoracalis sup; highest thor. a.)	
Present	43 times
Absent	24 times
Usual findings: from first portion of ax	25 times
Other findings:	
a. forms thor. acr. trunk with thor. acr. and lat. thor.	1 time
b. from costocerv. trunk	1 time
c. from subclavian	8 times
d. from second port. of ax. (indepen.)	4 times
e. thor. acr. trunk (second port.)	2 times
f. from pect. br. of thor. acr. trunk (cec. pt.) (eight times from sec. pt. of ax.)	2 times

TABLE II. VARIATIONS WHICH WERE OBSERVED IN THE THORACOACROMIAL ARTERY

Thoracoacromial Artery (a. thoracoacromialis; acromiothoracic a.; thoracic axis)	
Relation to pectoralis minor m.	
Proximal (med. to)	19 times
Under (post. to)	47 times
Distal (lat. to)	1 time
Variations in type of origin:	
a. forms thor. acr. trunk with lat. thor.	5 times
b. forms thor. acr. trunk with lat. thor. and subscap.	2 times
c. forms thor. acr. trunk with lat. thor. and sup. thor.	1 time
d. from two trunks under pec. minor m.	2 times
e. fan-like trunk up over med. bord. p. min.	11 times
f. gives off lat. thor. as sep. branch	2 times

this discussion, is very important to the dissectionist or surgeon. It becomes the "landmark" in the process of exposing the axilla and its vessels. After sectioning the insertion of the pectoralis minor muscle several salient features present themselves. The axillary vein becomes the first major vessel encountered. It varies considerably in size. In some instances the lateral portion of it is so small that it could easily be mistaken for one of its branches, such as the subscapular vein. It bifurcates early in its second and third portions much more often than does the artery. This may produce unique patterns of branches and anastomoses. Finally, its position is quite inferior to the clavicle, especially in its second and third segments. This should caution one to proceed slowly and carefully while exposing and stripping it of its adjacent tissue.

Comments

There are certain comments to be made as a result of this study which should be helpful to the surgeon in performing radical mastectomy. After severing the insertion of the pectoralis minor muscle and upon opening of the coracoclavicular fascia, the axillary space is, so to speak, unlocked. The axillary vein immediately presents itself with its branches and the corresponding branches from the axillary artery. The vein lies upon and slightly below the axillary artery. It is quite inferior to the clavicle. If the pectoralis minor muscle

TABLE III. LATERAL THORACIC ARTERY AND ITS VARIATIONS

Lateral Thoracic Artery (a. thoracalis lat.; long thor. a; ext. mammary a.)	
Relation to pectoralis minor. m.	
Proximal (med. to)	3 times
Under (post. to)	52 times
Distal (lat. to)	12 times
Variations in type of origin:	
a. forms thor. acr. trunk with thor. acr.	5 times
b. forms thor. acr. trunk with thor. acr. and subscap.	2 times
c. forms thor. acr. trunk with thor. acr. and sup. thor.	1 time
d. from common trunk with subscapular	2 times
e. from subscapular	2 times

is further freed by ligating and sectioning of the pectoral branch of the thoracoacromial artery, the axillary vessels become more clearly exposed. As dissection and stripping of the vessels progresses the following findings and variations of each axillary branch from the artery may be anticipated.

The superior thoracic artery is the smallest derivative. It is relatively unimportant and is sacrificed during the removal of the pectoralis major and minor muscles. It is apt to be present 64 per cent and absent 36 per cent of the time. When it is present and identified, it originates from the first portion of the axillary artery, the usual origin, in 59 per cent of cases. It arises from the subclavian artery 18 per cent of the time and from the second segment of the axillary artery 18 per cent of the time. In 5 per cent of dissections it will have some other origin.

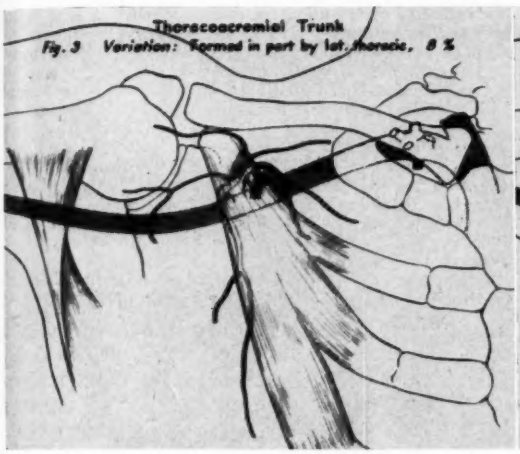


Fig. 3. Thoracoacromial trunk. One of its variations.

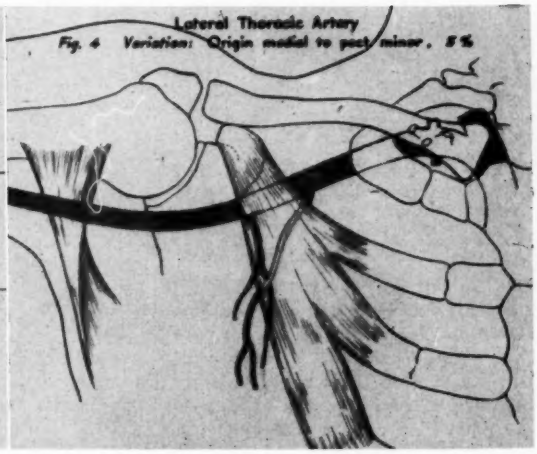


Fig. 4. Lateral thoracic artery. One of its variations.

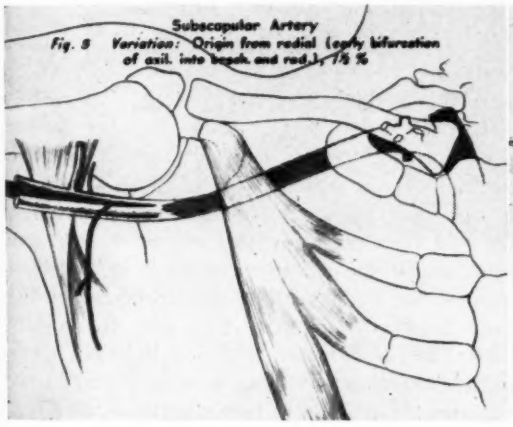


Fig. 5. Subscapular artery. One of its variations.

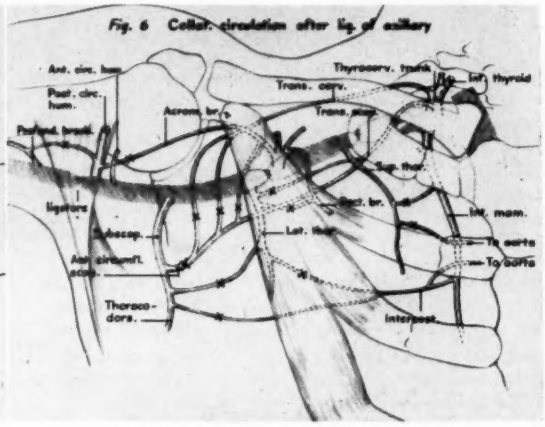


Fig. 6. Collateral circulation after ligature of axillary artery.

The thoracoacromial artery, the second largest branch, can be expected to originate from the second portion of the axillary artery in 70 per cent of cases and from the first portion in 28 per cent of cases. It has a common origin with the superior thoracic, the lateral thoracic and the subscapular arteries 13 per cent of the time. It has variations in its manner of origin 22 per cent of the time, but these variations are relatively unimportant.

The lateral thoracic artery ultimately assumes a common course with its corresponding vein and the long thoracic nerve. It is the third largest branch from the axillary artery. It is almost always ligated and sectioned when performing radical mastectomy. It originates from the second portion of the axillary artery 77 per cent of the time. In 18 per cent of dissections it should stem from the third portion and in 5 per cent of dissections from the first part of the axillary artery.

The subscapular artery, in most instances, represents the lateral boundary of the axillary space. From a surgical standpoint it is the most important branch of the axillary artery to be considered during radical mastectomy. It has the greatest number of variations when compared to the others. It can usually be kept intact, but stripping it, its accompanying vein and the thoracodorsal nerve of adherent tissues is imperative. Its usual,

TABLE IV. VARIATIONS IN THE SUBSCAPULAR ARTERY

This artery presented the greatest number of variations.

Subscapular Artery (a. subscapularis)	
Usual findings: single origin from third port. of ax. between lat. border p. min. and lat. dorsi	39 times
Variations:	
a. lat. to med. border of lat. dorsi. m.	5 times
b. from common tr. with lat. thor.	2 times
c. forms th. acr. tr. with th. acr. and lat. thor.	2 times
d. gives off lat. thor.	2 times
e. bif. at origin and gives off th. dor. and cir. scap.	4 times
f. same trunk as ant. and post. circumfl. humeral	5 times
g. gives off ant. circumfl. humeral	2 times
h. gives off post. circumfl. humeral	2 times
i. gives off a. and p. circumfl. humerals	1 time
j. early bif. of ax. with subsc. from radial	1 time
from brachial	2 times

TABLE V. INCIDENTAL OBSERVATIONS

Cephalic Vein	
a. empties into axillary vein	48 times
b. empties into subclavian vein	16 times
c. not accurately determined	3 times
Axillary Vein (relatively large or small)	
a. large	39 times
b. small	28 times
Medial Cord (brachial plexus)	
a. Prominent	18 times
b. Not prominent	49 times

single origin from the last segment of the axillary artery and its subsequent branches into the circumflex scapular and thoracodorsal arteries may be expected in 57 per cent of cases. Eight per cent of the time it courses lateral to the medial border of the latissimus dorsi muscle. In 16 per cent of dissections the subscapular artery gives off the anterior and posterior circumflex humeral arteries either independently or by a common trunk. After an early bifurcation of the axillary artery, in 4.5 per cent of cases the subscapular artery arises from either the brachial or radial arteries. This last possibility is exceedingly important and should always be kept in mind.

The anterior and posterior circumflex humeral arteries are usually considered to be out of the field of dissection during the routine, radical amputation of the breast. However, they may have a common origin with the subscapular artery or an origin from the resulting arteries formed immediately after early bifurcation of the axillary artery in its third portion.

Summary

Sixty-seven axillae of cadavers were dissected, and a study of the axillary artery, its usual branches and their variations from the usual pertaining to radical mastectomy was made. A semischematic drawing of the collateral circulation after ligature of the various segments of the axillary artery has also been presented.

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3. Halsted, W. S.: The results of operations for the cure of cancer of the breast performed at the Johns Hopkins Hospital from June, 1889, to January, 1894. Johns Hopkins Hospital Reports, 4:297-350, 1894.
4. Spalteholz, Werner: Hand Atlas of Human Anatomy, 7th ed., pp. 423-428. Philadelphia: Lippincott, 1943.

Discussion

DR. CARL O. RICE.—I have been very much interested in these studies of Dr. Peterson in that I have been following his work throughout the period in which he has been doing them. I am aware that he has conducted a very carefully outlined procedure of dissection.

Radical breast surgery is an anatomical dissection. It is important that the surgeon know the anatomy of the axillary region and its variations in order that he can more confidently carry out the technique of radical mastectomy.

Until one has reached the anatomical region beneath the pectoralis minor muscle, no important structures are endangered. After this area is encountered, it is well to know all of the variations, lest permanent, avoidable damage be done to nerves and blood vessels which may be encountered out of their usual normal relationship.

Dr. Peterson has illustrated the variations of anatomical relationship in this area. It will be interesting to await the publication of this paper in order that his drawings can be studied more extensively. If each of us could spend a small fraction of the time that Dr. Peterson has devoted to this study, we would be well repaid by obtaining a greater knowledge of the anatomy of the axillary region. These variations which Dr. Peterson has described cannot be learned from standard textbooks of anatomy.

I am happy to see Dr. Peterson become a member of our society on the basis of this inaugural thesis.

Dr. C. D. Haagensen, associate professor at Columbia University Medical School, New York, New York, presented a paper entitled "Surgical Technique in Carcinoma of the Breast."

WILLIAM H. RUCKER, M.D.
Recorder

PUBLIC RELATIONS

(Continued from Page 73)

bers may well be addressed on the various activities of the society by the chairmen of the various society committees on medical ethics, legislative activities, medical economics, voluntary health insurance and public relations. In some societies, the new members are invited several times a year to sit in with the executive committee in its deliberations. In some localities, the members of the local press are invited to dine with the society officers and members of the Public Relations Committee once or more times a year. Personal acquaintanceship leads to better understanding.

It is with a feeling of uncertainty that most of us approach the new year. We can hold ourselves responsible for our public relations as a profession. We pray for Divine guidance for those responsible for the public relations of our nation.

As in the case of other highly infectious diseases, the spread of tuberculosis can only be controlled by the isolation of the patients with active, sputum-positive infection from those who are susceptible to the disease but who have not yet contracted it. This is not being done and cannot be done among the American Indians for whom hospital accommodations are not provided by the Bureau of Indian Affairs and for whom funds are not available to expand the contractual service with non-government-operated sanatoriums—FRED T. FOARD, M.D., J.A.M.A., February 4, 1950.

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RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

In Memoriam

WILLIAM STANFORD EMMERSON

Dr. William S. Emmerson of Waconia died on April 19, 1950, at the age of seventy-two.

Dr. Emmerson was born at Caesarea, Ontario, April 3, 1878. He obtained his medical education at the University of Minnesota, graduating in 1904. After practicing in Minneapolis a year he moved to Mayer, Minnesota. He was a member of the Scott-Carver County Medical Society, the Minnesota State Medical Association and American Medical Association.

GEORGE H. FREEMAN

Dr. George H. Freeman, superintendent of the State Sanitorium at St. Peter for twenty-three years before his retirement in 1948, died December 2, 1950, at Butte, Montana, at the age of sixty-seven.

Dr. Freeman was born at Perham, Minnesota, January 5, 1884. His medical degree was obtained from the University of Minnesota in 1905 and he interned at Ancker Hospital, Saint Paul. He joined the staff at Saint Peter Sanatorium in 1906 and remained there until 1912 when he became superintendent of the State Sanatorium at Willmar. In 1925 he became superintendent of the sanatorium at Saint Peter.

Dr. Freeman was one of the very first in Minnesota to be certified as a specialist in psychiatry, and many present leaders in the specialty received their training under him. Even after retiring in Minnesota, he continued in the field as superintendent of Montana State Hospital at Warm Springs, Montana.

Dr. Freeman was a member of the Nicollet-LeSeuer County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was also a member of the American College of Physicians and Surgeons and was a past president of the State Neurological Society.

Dr. Freeman is survived by a son, Dr. John Freeman of Rochester, Minnesota. His wife died in 1946.

A. E. HENSLIN

Dr. A. E. Henslin, a practitioner in Le Roy, Minnesota, for fifty-six years, died on November 25, 1950, at Cresco, Iowa. He was eighty-five years of age.

Dr. Henslin was born June 20, 1865 at Racine, Wisconsin. He obtained his medical education at the College of Physicians and Surgeons at Keokuk, Iowa, graduating in 1891. His internship was served at Trinity Hospital, Milwaukee. He practiced for a short time at Adams before going to Le Roy. He, along with Dr. O. H. Hegge of Austin and Dr. G. J. Schottler of Dexter, had each served his community over fifty years and were honored at a testimonial dinner given by the Mower County Medical Society in 1947.

Dr. Henslin married Mary L. Pinckney in Spring Valley in 1905. She died in 1914. One son, Dr. M. E. Henslin of Cresco, Iowa, survives him, along with two sisters.

Dr. Henslin had been a member, as well as president and treasurer, of the Mower County Medical Society for thirty years. He was automatically a member of the Minnesota State Medical Association and the American Medical Association.

CHARLES B. LENONT

Dr. Charles B. Lenont, a pioneer Mesabi Range physician, passed away November 5, 1950. He was eighty-one years of age.

Dr. Lenont was born at Northfield, Minnesota, September 30, 1869. He graduated from the University of Minnesota medical school in 1898. He practiced medicine at the Soudan Hospital for six months and then worked for two years for Dr. Harwood in the Fayal Hospital at Eveleth.

Early in 1901 Dr. Lenont moved to Virginia and the next year erected the Lenont hospital which he operated until the Virginia Municipal Hospital was opened in 1935. With the opening of this hospital, he formed the Lenont-Peterson Clinic in conjunction with Edward N. Peterson of Eveleth. Dr. Lenont remained in active practice, limiting his work to general and orthopedic surgery until his retirement in 1942.

Dr. Lenont was a fellow in the American College of Surgeons, a member of the St. Louis County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

The various business enterprises which engaged Dr. Lenont's attention included the Dunka River Lumber Company of which he was president, the Stanley Mining Company, and a 1,000 acre farm in the Babbit area for the growing of potatoes.

He was much interested in curling being one of the founders of the Virginia Curling Club. He later established a trust fund to be used in furthering interest in this sport. He was a charter member and past master of the local Order of Masons, and Aad Temple, Duluth, Ancient and Arabic Order of the Nobles of the Mystic Shrine and a member of the Benevolent and Protective Order of the Elks.

In addition to the widow, Dr. Lenont is survived by one son, Stanley of Virginia; three daughters, Mrs. Emerson McNeil of Duluth, Mrs. Cedric Adams of Minneapolis, and Mrs. James Giblin of Virginia; six grandchildren, and one brother, Granville, of Livengood, Alaska.

R. C. RADABAUGH

Dr. R. C. Radabaugh of Hastings, well-known as a Republican leader in the state, died after a brief illness on November 24, 1950, at Mounds Park Hospital, Saint Paul, Minnesota.

(Continued on Page 84)

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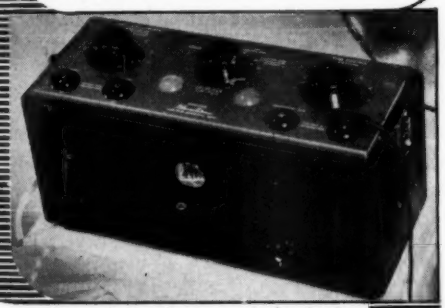

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R. C. RADABAUGH

(Continued from Page 82)

Dr. Radabaugh was born at Zumbro Falls, Minnesota, March 17, 1890. He attended high school at Rochester, Minnesota, Hamline University, the University of Minnesota and the University of Illinois, where he obtained his medical degree in 1917. After interning at the University Hospital in Chicago, he practiced in Mazeppa, Minnesota, then left his practice to serve as Lieutenant in World War I. Following his return from service, he practiced in Hastings and in Saint Paul.

Dr. Radabaugh was State Republican chairman from 1938 to 1944, leading the G.O.P. organization through three successful Minnesota campaigns. He also managed Stassen's unsuccessful bid for the presidential nomination in 1944.

He was a member of the American College of Surgeons, the Ramsey County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was also a member of the Dakota lodge, A.F.&A.M., Hastings; the Scottish Rite; Osman Temple of the Shrine, Saint Paul; Acacia fraternity, and the Phi Rho medical fraternity.

Dr. Radabaugh is survived by his wife, Lois, two daughters, Charlotte of Hastings and Virginia (Mrs. Philip Simon) of Los Angeles.

ERNEST L. STEPHAN

Dr. Ernest L. Stephan of Hinckley passed away at his home November 13, 1950.

He was born at Cleveland, Ohio, January 27, 1869, the son of Judge Daniel Stephan of the Supreme Court of Ohio, who was one of the honorary pallbearers at the funeral of Abraham Lincoln.

Dr. Stephan came to Pine County as a boy and attended the schools in Pine City, later serving as County Superintendent of Schools in Pine County. He obtained his M.D. degree from the University of Minnesota Medical School in 1893 and began practice at Hinckley in time to figure heroically in the Great Hinckley Fire of 1894, helping others and himself, escaping on the Great Northern train through the flames to Duluth. He immediately returned on the first relief train and worked for hours treating the burned and identifying the dead.

He married Clara Hay of Pine City in 1896. He is survived by one son, Angus S. Stephan, of Harris, Minnesota, and one daughter, Mrs. E. L. (Ruth) Beyer, of Kansas City. Mrs. Stephan and a foster son, Raymond, preceded him in death.

Dr. Stephan served as surgeon for both the Great Northern and Northern Pacific Railroads. He was a charter member of the Hinckley Lodge A.F. and A.M. and for many years belonged to the Modern Woodmen and the Royal Neighbors of America. He was a member of the Pine County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

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Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245; N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592; Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

✦ Reports and Announcements ✦

AMERICAN ACADEMY OF GENERAL PRACTICE MINNEAPOLIS CHAPTER

The annual meeting of the Minneapolis Chapter of the American Academy of General Practice was held in Minneapolis on December 11. Dr. Herman E. Drill, Hopkins, was elected president of the organization. Other officers elected include Dr. E. G. Oppen, vice president; Dr. Alexander J. Ross, secretary-treasurer, and Dr. Aaron Friedell, program chairman, all of Minneapolis.

AMERICAN COLLEGE OF PHYSICIANS

A six-day postgraduate course in peripheral vascular diseases, sponsored by the American College of Physicians, was held in Rochester November 27 through December 2. Director of the course was Dr. Walter F. Kvale of the Mayo Clinic. Principal speaker at a special dinner during the course was Dr. William S. Middleton, president of the American College of Physicians and dean of the University of Wisconsin Medical School.

WESTERN SURGICAL ASSOCIATION

The fifty-eight annual meeting of the Western Surgical Association was held in Minneapolis November 29 through December 2. Several hundred surgeons from throughout the nation watched operations in Minneapolis hospitals and attended clinics at Minneapolis General and Veterans Hospitals. A feature of the session was a group of reports on experimental work done by the University of Minnesota Department of Surgery. Forty scientific papers were presented during the meeting.

NATIONAL CONFERENCE ON MEDICAL SERVICES

The twenty-fourth annual meeting of the National Conference on Medical Services will be held February 11 in the Red Lacquer room of the Palmer House in Chicago.

The meeting is of special interest to presidents, secretaries, and public relations personnel of state and county medical societies.

FELLOWSHIP AVAILABLE

Ten fellowships supported by the Graduate College of the University of Illinois will be awarded to qualified scholars who contemplate academic careers in the medical and allied sciences. Stipends of $1,800 to $2,400 are available for medical and dental graduates with a maximum of $3,000 for unusually well-qualified applicants. Exemption from tuition fees is provided for all appointees.

(Continued on Page 88)

ANNUAL CLINICAL CONFERENCE
CHICAGO MEDICAL SOCIETY
March 6, 7, 8, 9, 1951 • Palmer House, Chicago

A conference planned to keep physicians abreast of the new things which are developed from year to year.

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- Organization of a Blood Bank
- Neurological Clinic
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- Local Anesthesia
- Fluid and Electrolytic Balance in Surgery
- Use and Misuse of Obstetrical Forceps
- Common Problems in X-Ray Interpretations
- Laboratory Tests (Diabetes, Proper use of Insulin, Prothrombin Tests)

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Diefenbach, W. C., and Meneely, J. K., Jr.: Yale J. Biol. & Med. 21:421, 1949.

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FELLOWSHIP AVAILABLE

(Continued from Page 86)

Registration for work toward M.S. or Ph.D. degrees is required.

Applicants need not have completed clinical internships. Minimum requirements are Bachelor's and M.D. degrees. Evidence of scholarship and promise of research ability are primary considerations. The fellowships provide an opportunity for research experience in the basic sciences and the application of these sciences to clinical investigation.

Applications must be received by February 15 with selections to be announced by April 1. Forms may be obtained from the Associate Dean of the Graduate College, University of Illinois, 808 S. Wood Street, Chicago 12, Illinois.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The regular dinner meeting of the Minnesota Society of Neurology and Psychiatry was held at the Town and Country Club, Saint Paul, Tuesday, January 9, 1951.

Proposed active members ballotted upon were Drs. Jorge A. Lazarte and Sidney K. Shapiro.

The scientific program was as follows:

1. Clinical Application of the Electroencephalogram (Inaugural thesis)
   V. Richard Zarling, M.D.
2. The Cardiac Risk of Electroshock Therapy (Inaugural thesis)
   Clarence J. Rowe, M.D.

CANCER STUDIES

The Minnesota Department of Health is now in the process of analyzing the reports of cancer patients who were hospitalized in Minnesota during the last three years. Added to this will be an analysis of positive cancer biopsies from pathologists received during 1950. This three-year study of cancer incidence and distribution in Minnesota will furnish data for special studies on cancer to determine what may be necessary to facilitate diagnosis, treatment, and follow-up of cancer patients in many areas of the state.

There are now assembled in the files 15,000 cancer cases reported by hospitals throughout the state and over 5,000 biopsy reports of positive cases.

This study was undertaken as a time-limited project. From earlier reports already published and occasional surveys made on this data, it seems evident that there is little change in the cancer picture from year to year. In view of this observation it seems reasonable to assume that sufficient material may be on hand at the present time to give the over-all picture of cancer in Minnesota.

In consideration of the above, the Minnesota hospitals and pathologists have been asked to temporarily discontinue the reporting of cancer cases to the Minnesota Department of Health.

During the three years of the study, there has developed a co-operative spirit between hospitals, medical profession and the Minnesota Department of Health as evidenced by the fact that every hospital and all pathologists have sent reports of cancer cases. The staff of the Minnesota Department of Health working on this project is deeply grateful for the fine co-operation of all those who supplied material for the study.

CONTINUATION COURSE IN CARDIOVASCULAR DISEASES

Dr. Emile Holman, Professor of Surgery, Stanford University School of Medicine, San Francisco, will be the visiting faculty member for the course in Cardiovascular Diseases to be presented at the Center for Continuation Study on February 15 to 17, 1951. Dr. Holman will also deliver the annual E. Starr Judd Lecture in Surgery on the evening of Thursday, February 15. His subject will be "Experimental and Clinical Observations on Constrictive Pericarditis."

E. STARR JUDD LECTURE

The eighteenth E. Starr Judd Lecture will be given by Dr. Emile Holman, professor of surgery, Stanford University School of Medicine, San Francisco, on February 15 at 8:15 p.m. in the Amphitheater, Medical Sciences,

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First Investor: "I don't know what you mean—the 5% return is all mine, isn't it?"

Second Investor: "Aren't you forgetting to consider the income tax you must pay on your return? Even with this year's taxes your investment income will be under 3%. It may be less than that with next year's taxes."

First Investor: "What about the income tax on your 3% return?"

Second Investor: "My income tax payments are limited to professional earnings. My investment income is tax-exempt because I buy Municipal Bonds."

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University of Minnesota. Dr. Holman's subject is "The Surgical Treatment of Constrictive Pericarditis; Clinical and Experimental Observations."

The late E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this annual lectureship in surgery a few years before his death.

WASHINGTON COUNTY SOCIETY

At the annual meeting of the Washington County Medical Society the following officers were elected: Dr. George McC. Ruggles, Forest Lake, president; Dr. Ray G. Johnson, Stillwater, vice president; Dr. E. Sydney Boleyn, Stillwater, secretary-treasurer; Dr. Boleyn, delegate; Dr. Wade R. Humphrey, Stillwater, alternate delegate; Dr. Johnson, censor for 1951-1953.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

The National Society for Crippled Children and Adults will hold its 1951 annual convention in Chicago, October 3 through 6. Sessions will be held in the Palmer House. New techniques and new advances in the care and treatment of crippled children will be emphasized throughout the convention meetings by medical and other leaders in the specialized professional fields concerned with crippling conditions.

Woman's Auxiliary

PRESIDENT EXTENDS GREETINGS

Mrs. Charles W. Waas

To every Minnesota doctor's wife, and particularly to our own Auxiliary members, may I extend wishes that the New Year will give to each one her share of health, good fortune and happiness.

MEMBERSHIP REACHES 2,048

Mrs. John Dordal

The state treasurer was pleased and proud of the work done by all the county treasurers. To be able to meet the "deadline" with all 2,048 members paid up, was the result of splendid co-operation of the county treasurers and of some five presidents whose county treasurers were vacationing. The National President complimented Minnesota on its fine record.

Many auxiliaries have started collecting 1951 dues. Each auxiliary should try for an "every doctor's wife" membership. When all possible dues are in, please send them to the state treasurer promptly.

PROMINENT AUXILIARY MEMBER DIES

Mrs. Rachel S. Branham, wife of Dr. Donald S. Branham, St. Peter, died in Mankato on October 31, 1950. Mrs. Branham was the first president of the recently organized auxiliary of Freeborn county. The Branhams first moved to Albert Lea in 1924 where Dr. Branham practiced until 1941 when he entered active military service. The Branhams returned to Albert Lea in 1946 and continued to maintain their home there until July 1949. At that time, they moved to St. Peter, where he is now assistant superintendent of the St. Peter State Hospital. Mrs. Branham became an active member in the Nicollet-LeSueur County Medical Auxiliary after moving to St. Peter.

She is survived by her husband, Dr. D. S. Branham, a son Robert of South Saint Paul, a granddaughter, Pamela Ann, and a sister, Miss Marie Johnson, Coleraine.

PRESIDENT-ELECT REPORTS ON STATE PRESIDENT CONFERENCE

Mrs. F. P. Moersch

In November, 1950, Mrs. Charles W. Waas, state auxiliary president, and myself attended the Seventh Annual Conference of State Presidents, Presidents-Elect and National Chairmen of Standing Committees of the Woman's Auxiliary to the American Medical Association in Chicago. The theme of the conference was "Public Service Through Health Education." It was a good meeting, both stimulating and inspiring. Minnesota doctors' wives should be determined to make the Woman's Auxiliary to the Minnesota State Medical Association even more important than it is at the present time.

Mrs. Herold, Shreveport, La., National President, called the conference to order. She and Mrs. Wahlquist, Minneapolis, President-Elect of the national auxiliary, contributed a great deal toward the successful conduct of the meeting.

In addition to panel discussions by committees on organization, public relations (Mrs. Waas participated in this panel with a talk on Health Days), program, Today's Health, legislation, and reports of standing committee chairmen, talks were heard by Dr. Ernest B. Howard, Assistant Secretary of the AMA; Dr. George M. Lyons, Special Assistant of the Atomic Medicine Section and Chief Radio Isotope Section of the Veterans Administration; Dr. W. W. Bauer, Director of the Bureau of Health Education of the AMA; Dr. Thomas Hull, Director of the Bureau of Exhibits of the AMA; Ralph Greer, Director of Motion Pictures of the AMA; Miss Leone Baxter and Clem Whitaker, Directors of the National Education Campaign of the AMA.

The work of the auxiliary was praised by guest speakers, who referred to the organization as "the right arm of the AMA," and as "ball carriers for the AMA." Those attending were assured that the AMA appreciates the help it is receiving from the auxiliary members.

After taking stock of the Woman's Auxiliary to the Minnesota State Medical Association, it was felt that Minnesota has a splendid organization. All but a few counties are organized and these counties have members at large. However, in checking over the roster, it was discovered that there are many eligible women whose names do not appear as auxiliary members. Belonging to the auxiliary stimulates interests in health matters, and members can serve better as a liaison between the doctors and the public. It must be evident to all that, in these critical times when there are forces at work threatening liberties and whittling away at freedom, the auxiliary should stand back of the AMA in its fight against socialized medicine.

To the president-elect falls the duty of being organization chairman. If, therefore, any auxiliary members have problems which come under this department, please write to me.

As one of the auxiliary committee chairmen has said: "It's never too late to be what you might have been."

Best wishes for the coming New Year!

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Of General Interest

ACTH and Cortisone Contraindicated in Tuberculosis.—A warning against the use of ACTH and cortisone in patients with active tuberculosis has been issued by the Committee on Medical Research and Therapy of the American Trudeau Society, medical section of the National Tuberculosis Association.

Because of their apparent adverse effect on resistance to tuberculosis, the committee also urged that the hormones be used with "extreme caution" in persons with possible latent tuberculosis and that, as a caution, physicians examine their patients for tuberculosis before instituting hormone therapy for any cause.

The full statement follows:

"Because the action of ACTH and cortisone upon the factors of resistance to tuberculosis has been shown to be deleterious in at least three species of experimental animals (mice, guinea pigs and rabbits), and there is strongly suggestive evidence along the same lines in human beings, it is recommended that these substances *not* be used in patients with active tuberculosis, and that they be used with extreme caution even in human beings with possible latent tuberculous infection, until such time as, further investigative work has shown that such administration may be safe. The routine diagnostic examination for tuberculosis of patients under physicians' care is especially necessary for patients who are being considered for ACTH or cortisone therapy."

* * *

Dr. Philip H. Soucheray has become associated with Dr. John R. Meade in the practice of internal medicine, with offices at 836 Lowry Medical Arts Building, Saint Paul.

* * *

Dr. R. E. Carlson and **Dr. Manley F. Juergens** of Stillwater attended a course in child psychiatry at the University of Minnesota from November 27 to December 1.

* * *

Dr. Dean Sherwood Luce of Canton, Massachusetts, was chosen by the AMA delegates at Cleveland in December as the family doctor of 1950. Dr. Luce, at the age of seventy-four, is still answering calls day and night and has been since 1905 when he first put out his shingle in Canton.

* * *

It was announced on November 29 that **Dr. Wallace R. Anderson,** a former pediatrician at the Austin Clinic in Austin, was en route to Japan in Army service. Dr. Anderson, who held a commission in the Naval Reserve, had been called to active duty about two weeks previously and assigned to duty with the Army.

* * *

Dr. John Briggs, Saint Paul, spoke on the subject of cardiac arrhythmias at a meeting of the Minnesota Society of Anesthesiologists in Saint Paul on December 2.

* * *

Dr. Wade R. Humphrey of Stillwater recently returned from a visit to his native state, Virginia.

* * *

Dr. Walter Eisenman, formerly of Coleraine, has begun a fellowship in obstetrics and gynecology at the Mayo Foundation in Rochester.

* * *

Dr. and Mrs. J. F. Weir returned to Rochester late in November after a three-month tour of Europe. Dr. Weir, head of a section in medicine at the Mayo Clinic, attended the First International Congress of Internal Medicine in Paris and visited clinics and hospitals throughout Europe.

* * *

The new coroner for Todd County is **Dr. A. J. Lenarz** of Browerville, who won the office in the November general election when his name was written on the ballot by many of his friends. No candidate had filed for the office. Dr. Lenarz, a graduate of Marquette University, has practiced in Browerville since 1936.

* * *

On December 1, **Dr. R. I. Gruys** dissolved his partnership with the Cottonwood County Clinic and established his own practice in Windom. Dr. Gruys has practiced in Windom since July, 1949.

* * *

Dr. Benjamin Spock, former Mayo Clinic staff member, has joined the University of Pittsburgh Mental Health Center. At Rochester Dr. Spock was co-director of the Rochester Health Institute. At Pittsburgh he will be professor of child development and a staff member in the Department of Pediatrics at Children's Hospital and the Graduate School of Public Health.

* * *

December 10 was Appreciation Day at Buffalo Lake when local residents gathered to honor **Dr. E. C. Gaines** for his fifty years of medical service in the area. The day's festivities included a banquet at noon, an afternoon program of talks and music, an "open-house" supper, and an evening of visiting and renewing old acquaintances.

Dr. Gaines is a graduate of the University of Minnesota Medical School. He moved to Buffalo Lake from Steen in November, 1900.

* * *

It was announced on November 30 that **Dr. Harold S. Orwoll** of St. Peter had enlisted in the medical corps of the Navy and had moved to Decorah, Iowa,

(Continued on Page 94)

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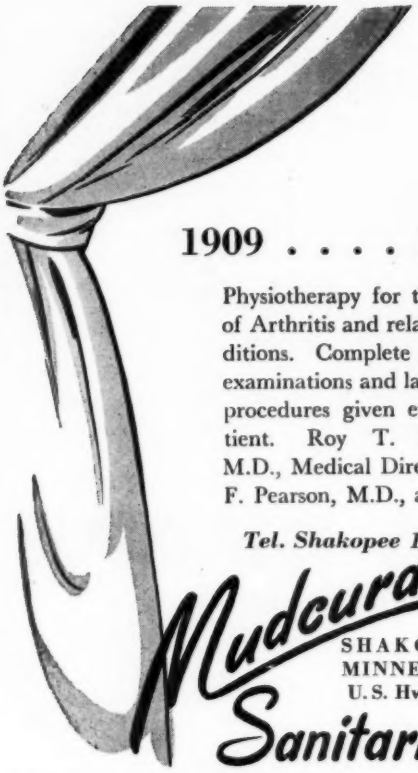

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(Continued from Page 92)

to await orders to active duty. Shortly before he joined the Navy Dr. Orwoll had been elected county coroner.

* * *

Dr. I. L. Mitby, formerly of Aitkin, has opened offices for the practice of medicine at 7634 Lyndale Avenue South, Richfield (Minneapolis suburb). Dr. Mitby was in practice at Aitkin for twelve years.

* * *

Dr. E. T. Rechlitz, who was associated with Dr. F. G. Folken in the Folken Clinic at Albert Lea since 1948, has moved to Beloit, Wisconsin, to open his own practice. Dr. Rechlitz is a graduate of the Marquette University School of Medicine.

* * *

Five **Mayo Clinic** staff members officially retired at the annual meeting of the staff in Rochester on November 20. They are Dr. W. L. Benedict, Dr. A. C. Broders, Dr. N. M. Keith, Dr. G. B. New and Dr. R. M. Wilder. Together the five had served a total of 169 years with the clinic.

At the election of staff officers Dr. Paul A. O'Leary was elected president, Dr. A. C. Davis, vice president, and Dr. N. B. Coventry, secretary.

* * *

In Annandale the front of the office of **Dr. Lester H. Bendix** has been remodeled. The new front is more modern in appearance, with aluminum-trimmed windows set in a brick facing.

* * *

Dr. John W. Helland of Spring Grove was presented with a special plaque, in recognition of his twenty years of service to the Houston County Christmas Seal organization, at the annual meeting of the Houston County Farm Bureau in Spring Grove late in November.

* * *

Dr. E. S. Boone, formerly with the Veterans Administration in Sioux Falls, South Dakota, began practicing medicine at Luverne just after January 1.

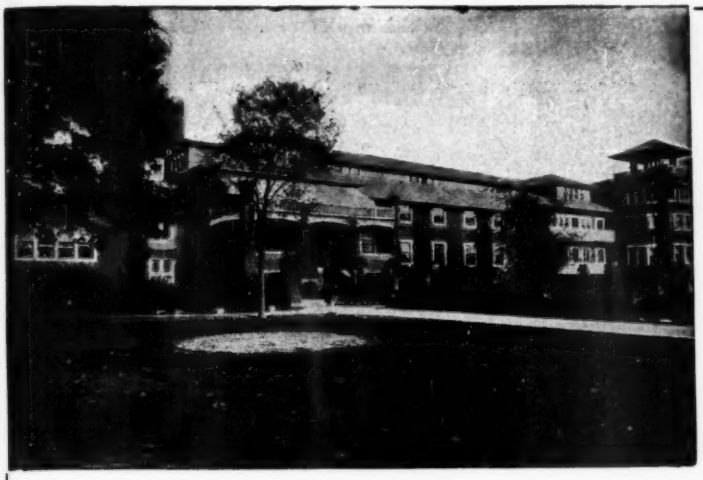
* * *

Dr. Philip S. Hench and **Dr. Edward C. Kendall,** both of Rochester, and **Dr. Thaddeus Reichstein,** Swiss professor, were presented with the Nobel Prize in medicine at ceremonies in Stockholm, Sweden, on December 10. The award was made by King Gustav VI.

On December 13, Dr. Hench crowned the Swedish queen of Christmas, Lucia, at a special festival. The honor of placing the crown was given to Dr. Hench since funds raised at the festival will be used for research for rheumatic children.

* * *

In November residents of Carlton and the surrounding area launched a campaign to forestall possible recall into military service of **Dr. E. A. Pasek,** the only physician in the community. They asked for deferment of Dr. Pasek, a veteran of World War II, on the grounds that he is essential to the health and welfare of the community.



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Dr. L. R. Gowan — **Dr. C. M. Jessico**
Dr. J. E. Haavik — **Dr. L. E. Schneider**

Dr. Eivind Klaveness, Saint Paul, celebrated his eightieth birthday on November 25. He announced that he had no intention of ever retiring from active practice.

* * *

Dr. Karl Pfuetze has resigned as medical director and superintendent of the Mineral Springs Sanatorium, effective January 15, to become medical director and superintendent of a new 500-bed tuberculosis hospital now under construction at the University of Illinois Medical Center in Chicago.

Dr. Pfuetze joined the staff of the Mineral Springs Sanatorium in 1940 as assistant to the late Dr. William Beadie, then superintendent. When Dr. Beadie resigned in 1941, Dr. Pfuetze was named acting superintendent. His appointment as superintendent and medical director came a few months later.

* * *

Dr. Russell M. Wilder, who recently retired as professor of medicine and head of a section in medicine at the Mayo Clinic, has taken a position with the United States Public Health Service.

* * *

Dr. Edward C. Sargent of Austin spoke on the subject of cancer over station KAUS, Austin, on November 30. The talk was sponsored by the Mower County Cancer Society.

* * *

A community celebration was held in Fisher on November 26 to honor **Dr. William H. Hollands** for his forty-one years of medical service in the area. Dr. Hollands began his practice in Fisher in 1909, immediately after he had completed his medical training. He has always been active in community affairs and has served as health officer and as mayor for two terms.

* * *

Dr. John E. Teisberg has become associated in the practice of industrial medicine and surgery with Dr. Robert J. Richardson. Their offices are located at 2395 University Avenue, Saint Paul.

* * *

Dr. John R. Fischer, Owatonna, was elected Steele County coroner by a write-in vote of more than 1,000 during the general election in November. No candidate filed for the office.

A graduate of the Washington University School of Medicine, Dr. Fischer has been practicing in association with Dr. J. A. McIntyre in Owatonna since July.

* * *

Dr. Louis B. Woolner, Rochester, spoke on "Primary Hyperparathyroidism: A Study of 112 Consecutive Cases" at a meeting of the Minnesota Pathological Society at the University of Minnesota on November 21.

HOSPITAL NEWS

The results of recent elections of hospital staff officers at three Minnesota hospitals are as follows:

St. John's Hospital, Saint Paul.—Dr. Herbert L.

(Continued on Page 98)

Storm Warning

MANY women see but do not identify the first disturbing signs of the menopause, and therefore reach their physicians' consulting rooms in double trouble—with anxiety superimposed upon the original symptoms.

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SURGERY—Intensive Course in Surgical Technic, two weeks, starting January 22, February 5, February 19.
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting February 5, March 5.
Surgical Anatomy and Clinical Surgery, two weeks, starting February 19, March 19.
Surgery of Colon and Rectum, one week, starting March 5.
Basic Principles in General Surgery, two weeks, starting April 2.
Gallbladder Surgery, ten hours, starting April 23.
Fractures and Traumatic Surgery, two weeks, starting March 19.

GYNECOLOGY—Intensive Course, two weeks, starting February 19.
Vaginal Approach to Pelvic Surgery, one week, starting March 5.

OBSTETRICS—Intensive Course, two weeks, starting March 5.

MEDICINE—Intensive General Course, two weeks, starting April 23.
Gastro-enterology, two weeks, starting May 14.
Gastroscopy, two weeks, starting March 5.
Electrocardiography and Heart Disease, two weeks, starting March 19.

PEDIATRICS—Intensive Course, two weeks, starting April 2.
Informal Clinical Course every two weeks.

UROLOGY—Intensive Course, two weeks, starting April 16.
Cystoscopy, Ten Day Practical Course, every two weeks.

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(Continued from Page 96)

Stolpestad, chief-of-staff; Dr. C. Kenneth Cook, assistant chief-of-staff; Dr. Robert W. Emmons, secretary.

Abbott Hospital, Minneapolis.—Dr. W. W. Rieke, Wayzata, chief-of-staff.

Mount Sinai Hospital, Minneapolis.—Dr. Moses Barron, president; Dr. Max Seham, vice president; Dr. Samuel Balkin, secretary-treasurer.

* * *

Dedication ceremonies for the **Dr. Henry Schmidt Memorial Hospital** at Westbrook were held on November 26. The dedication address was given by Dr. George A. Earl of Saint Paul. Tours were conducted through the new structure, and lunch was served to visitors.

* * *

Dr. Karl S. Klicka, formerly of Mount Vernon, New York, has become medical director of **St. Barnabas Hospital** in Minneapolis. He previously was director of the Woman's Hospital in New York City. A graduate of Western Reserve University, Dr. Klicka took advanced training in hospital administration at the University of Chicago.

* * *

The **Murray County Memorial Hospital** at Slayton was dedicated on December 12, with Governor Luther Youngdahl as the principal speaker. The modern forty-eight-bed hospital is X-shaped in design and can be expanded by future construction to a maximum of seventy-two beds.

* * *

A birthday party for the thirty-year-old **Charles T. Miller Hospital** in Saint Paul was held on December 6. Attending the party were employes, trustees and the medical staff of the hospital, which was founded on December 1, 1920. Among the entertainment was a showing of motion pictures taken by Dr. Vernon Smith of Saint Paul.

* * *

A group of residents of Red Lake Falls met on November 13 to formulate plans for a campaign to raise funds to equip and furnish the new **St. John's Hospital** at Red Lake Falls. An advisory committee was formed, and plans were made to select key leaders at a future meeting.

* * *

St. Barnabas Hospital in Minneapolis has established a medical photographic laboratory, believed to be the only full-time, completely equipped department of its kind in Minnesota outside of the University of Minnesota Hospitals. In charge of the laboratory is Leslie Hier, Jr., a trained medical photographer. The laboratory is housed on the first floor of one of the hospital's buildings.

BLUE CROSS—BLUE SHIELD NEWS

Physicians of Minnesota should be interested in knowing that for the past two months over 6000 claims for medical service have been paid by Blue Shield each month. Prior to that time the highest monthly case load slightly exceeded 4900. In addition to these claims paid, however, were some 600 claims which were rejected, and the item most frequently responsible for rejection was that the claimant was not a Blue Shield subscriber.

Of the 6,009 cases, 4,403 were for hospitalized patients and 1,606 were for compensable services rendered in the physician's office. The total payment was $205,167.76 for care rendered in the hospital and $22,562.20 was for office care.

Participating doctors of medicine received $39,317.15 for 1,774 medical cases, $138,720.82 for 3,297 surgical cases and $35,399.00 for 660 obstetrical deliveries. Minnesota non-participating doctors of medicine received $1,437.72 for 46 medical cases, $5,674.49 for 78 surgical cases and $360.00 for 51 obstetrical deliveries. Physicians practicing out of the state of Minnesota were compensated for 147 cases in the amount of $6,820.75.

Blue Shield enrollment for October 1950 increased by 7,407 participant subscribers or 2,516 contracts. The total contracts in effect as of October 31 was 147,505 and the total number of persons covered was 385,512. On October 31 Minnesota Blue Cross had 377,295 contracts in effect with 1,023,572 participants.

The number of medical forms received daily varies from approximately 250 to 400. In addition there is a considerable amount of correspondence relative to general Blue Shield information and inquiries as to our method of determining payment. Due to the volume of inquiries and also the similarity of reply in many instances it has seemed expedient and economical to utilize form letters insofar as possible. However, at such time as the work load and assignment of trained personnel permits, every effort will be made to personalize the greater part of Blue Shield correspondence.

Much consideration is being given to the question of foreknowledge. The Blue Shield contract excludes benefits for the first ten months of the contract for the treatment of a condition known by the subscriber or any of his dependents to exist at the time the contract is applied for. Medical history on such claims is obtained from the attending physician; medical history of previous care will also be requested from the subscriber. The determining factor in such cases is not the knowledge of the need for surgery or treatment, but the knowledge of the existence of the condition.

At this time Blue Shield wishes to extend to the medical profession every good wish for a happy and successful New Year and to express our appreciation for its co-operation and assistance in the past.

We need to teach people not only how to avoid tuberculosis, how to recover from tuberculosis and how to stay recovered, but also how to be healthy and how to make the most of life. . . . We cannot do an effective job in tuberculosis unless we do also a thoroughly good job of health education—that is, education in health.—IAGO GALDSTON, M.D., Nat. Tuberc. A. Tr., 1949.

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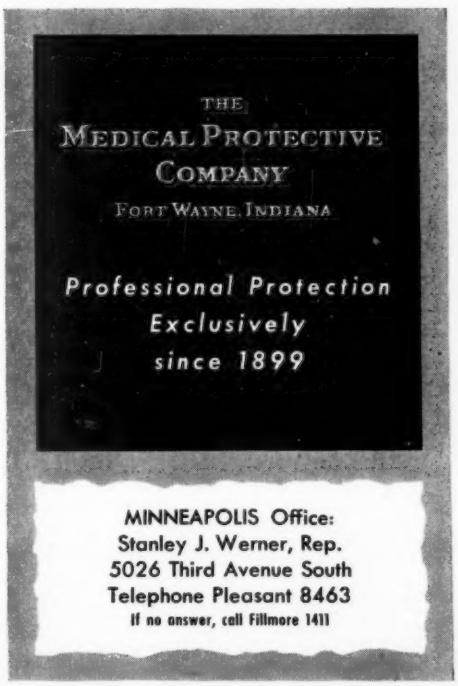

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

Books Received for Review

METHODS IN MEDICINE. The Manual of the Medical Service of George Dock., M.D., Sc.D., Second Edition. George R. Herrmann, M.D., Ph.D., Professor of Medicine, University of Texas Medical Branch of Galveston; Director of the Cardiovascular Service and Heart Station, University of Texas Hospitals; Consultant in Medicine to the Surgeon General, U. S. Army; Consultant in Vascular Diseases to the Marine Hospital, U.S.P.H.S. 488 pages. Price $7.50, cloth. St. Louis: C. V. Mosby Co., 1950.

ADVANCES IN INTERNAL MEDICINE. Volume IV. Editors: William Dock, M.D., Long Island College of Medicine, Brooklyn, N. Y., and I. Snapper, M.D., Mount Sinai Hospital, New York, N. Y. 549 pages. Illus. Price $10.00, cloth. Chicago: Year Book Publishers, 1950.

OBESITY. Edward H. Rynearson, M.D., F.A.C.P. Division of Medicine, Mayo Clinic. Associate Professor of Medicine, Mayo Foundation; and Clifford F. Gastineau, M.D., Fellow in Medicine, Mayo Foundation, Rochester, Minnesota. 134 pages. Illus. Price $3.50, cloth. Springfield, Illinois: Charles C Thomas, 1949.

HELP YOURSELF TO BETTER SIGHT. Margaret Darst Corbett. 218 pages. Illus. Price $2.50, cloth. New York: Prentice-Hall, Inc., 1949.

HOW TO BECOME A DOCTOR. A complete guide to the study of medicine, dentistry, pharmacy, veterinarian medicine, occupational therapy, chiropody and foot surgery, optometry, hospital administration, medical illustration and the sciences. George R. Moon, A.B., M.A. Examiner and Recorder, University of Illinois Colleges of Medicine, Dentistry and Pharmacy. 131 pages, Illus. Price $2.00, cloth. Philadelphia: Blakiston Co., 1949.

SIR WILLIAM OSLER. *Aphorisms from his Bedside Teachings and Writings.* Collected by Robert Bennett Bean, M.D. Edited by William Bennett Bean, M.D. 159 pages. Price, $2.50. New York: Henry Schuman, Inc., 1950.

To be the "Boswell" to Sir William Osler would be a labor of love under any circumstance. The Doctors Bean have accomplished their task admirably in this collection of aphorisms. Osler's humanistic approach to medicine has rarely been equaled. His writings could be cosmopolitan, sophisticated, or humorous, but always pertinent to the occasion. Unfortunately, taking a phrase out of the whole text often makes the statement trite or does not convey the whole meaning. The authors hope that these aphorisms will spur the reader into reading the whole essay from which they were taken.

This little volume should have wide appeal.

C. E. REA, M.D.

THE NATIONAL FORMULARY. Ninth Edition. Prepared by the Committee on National Formulary, under the supervision of the Council by authority of the American Pharmaceutical Association. Official for November 1, 1950.

Each druggist in Minnesota according to law must have a copy of the U. S. Pharmacopoeia, the National Formulary and the U. S. Dispensary.

The Pharmacopoeia was first published in 1820 and consisted of preparations considered by members of the medical profession to possess the greatest therapeutic merit.

The U. S. Pharmaceutical Association was formed in 1852. In time, the need of pharmacists for another standard volume to contain the many much-used preparations not included in the U.S.P. became apparent. The U. S. National Formulary of Unofficial Preparations was the result. The first volume appeared in 1888.

In 1906, the name of the volume was abbreviated to National Formulary and, according to the terms of the Federal Food and Drugs Law, was declared "official" as well as the U. S. Pharmacopoeia.

The National Formulary contains no secret drug nor is any drug admitted under a proprietary or trade-mark name or if the composition or process of manufacture is secret. No claims are made for therapeutic value of any of the items contained.

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